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THE PSYCHOPATHIC SEQUENCES OF HEREDITARY ALCOHOLIC ENTAILMENT.[1]

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NOTHING in neuropathology is now plainer than the retrograde heredity of chronic alcoholics. The alcoholic poison interferes with the highly organized physiological movements of the psychical centers, arrests and perverts the complex activities of the cerebral cortex, and begins a decadent and perverted neural metamorphosis that goes on from one stage of instability to another, until the final ending of all neural instability is reached (unless fortuitously arrested) in dementia or imbecility and death, when even perverted neural force can no longer be evolved. The evolution of the cerebro psychical centers thus arrested or perverted, ends in final dissolution and extinction of type.

The neuropathic thrall of entailed alcoholism is no new theme to neurologists. It was familiar to Benjamin Rush, and the researches of Morel in the field of neuropathic degeneracy sequent to ancestral alcoholic excess, have been so often affirmed and reaffirmed by credible medical testimony that no doubt now remains, in the medical mind, of the power of excessive ancestral alcoholic indulgence to pervert neuropsychic function in the descendants of the victims of this vicious disease.

We need not dispute the point as to whether alcoholism is a vice or disease, for it is, and it may be both or either, and whether it in the beginning be one or both its ending is always in disease, which is either the beginning or continuance of a transmitted neuropathic or neuro-psychopathic heritage.

If the first generation, as Morel has observed, shows immorality, alcoholic excess and brutal degradation, the second one will usually show, as he also observed, hereditary drunkenness, maniacal attacks, and general paralysis, or some similar psychopathic affection. The third generation may show sobriety, but instead of the transmitted drunkenness, the hereditary neuropathic perversion will probably reveal itself, as Morel saw it, in hypochondria, mania, lypemania and tendency to homicide and suicide; and we shall see in the fourth and after-coming generations feeble intelligence, stupidity, early insanity and the beginning of the end of the family in extinction.

All alienists have confirmed this observation of Morel, and the fatal heritage of chronic alcoholic toxhæmia is proven upon those living within the walls of asylums for the insane the world over, and in every walk of life without, and upon the cadavers of those who have died under the power of this neuro-toxic force. We no longer need the extensive clinical observations of Magnan nor the later pathological researches of Bevan Lewis for proof. The diseased arterioles, the granular degenerations of the nerve cells, pericellular and perivascular nuclei proliferation, aneurismal dilatations and exudative and indurative cerebral changes, are too familiar now to be longer doubted, and witnesses too many to be here enumerated, embracing all who have clinically studied inebriety, attest the fact that the habitual long-con-

[1] Read before the Mississippi Valley Medical Association, at Louisville, Ky., October 9, 1890.

tinued use of alcohol as a beverage in excessive quantity in one generation makes an indelible impress upon the nerve stability of the generations that follow.

It has the undoubted power of engendering neuropathic and psychopathic conditions *directly* in the individual, besides a great number of extra neural morbid conditions, as the oft observed and no longer doubted delirium tremens, epilepsy, insanity and imbecility, paralysis and the neuritides of drunkards show, and the morbid entailments of alcoholic excess do not stop with the individual as we have seen. They pass over in greater force to his descendants. This is the gospel of science. These morbid endowments of the drink habit are more apparent in the drunkard's progeny, for the reason that his children come into the world dowered with less power of neurotic resistance to the depressing and perverting assaults of alcohol and its compounds upon the integrity of the ganglion cells of the cerebrum and the nervous centers of the whole cerebro-spinal axis and sympathetic system.

By reason of a better organic heritage and the greater inherent power of vital resistance, the drinking person may show but little of the inroads his alcoholic excesses are making upon the physiological soundness of his cerebro-spinal and ganglionic centers. An occasional or single epileptic seizure during a debauch, or none at all, during a life given to drink; some perversions of disposition or mental depression, or a day or two of trance following a prolonged spree once or twice in a life-time, or none of these evidences of cerebro-psychical damage may so markedly appear. (The subject of alcoholic trance is too extensive to be treated here as its forensic merits require. We content ourself now with a simple note. *Vide finis.*)

None of these positive and more directly perceptible consequences of alcoholic damage may appear directly in the individual. He may go through life moderately full of alcohol, able to attend in a fairly good manner to the routine demands of his business, to be cut off prematurely under some slight extra organic strain (for one of his extraordinary hereditary endowment of nerve resistance), by an apoplexy —cerebral or pulmonary—or hepatic disease, which another less strongly endowed for resistance by nature, would have withstood. His ganglionic centers fail him in some vital crisis, and the "silver cord is loosed" forever.

The nerve mechanism, which never escapes in the habitual or periodic excessive drinker, but more especially in the regular so called moderate social drinker (who never sprees, though seldom refuses when asked to drink, who takes his regular evening night-cap, and morning eye-opener, and tri-daily appetizer) is the vasomotor system. This failure causes the pneumoniac to die from an attack of lung fever of no greater severity of causation than that of which his non-drinking fellow in the next bed promptly recovers. He may die prematurely of an over-worked kidney or an over-taxed liver, by reason of ganglionac paralysis (and I believe that over distension of the renal circulation from the general vascular hyperæmia of over-brain strain and alcoholic stimulation combined, are the remote causative factors of Bright's disease), and neither he nor his friends may think that alcohol has done him harm.

But look at the drinking man's children! He may have been himself a very proper and apparently healthy citizen, beginning in early life a regular business, and having acquired and filled a regular and honorable business place in the world, and never seriously sick till the last acute illness that suddenly carries him off before his physiologically appointed time.

Why is one child an idiot or imbecile, another erratic, moody, violent, visionary, melancholic, or insane, epileptic, choreic, or suddenly criminal despite the best of training and environment, especially among his latest offspring, while only the children born of his loins earlier in life, when alcoholic excess had made no organic impress upon him, are ordinarily healthy in mind and body?

The habitual disturbances of organic functions—morbid physiological exaltation, and reactionary morbid depression, through increased vascular relaxation and consequent capillary congestion, may not materially affect the integrity of function in the matured cells of the psychical centers of the parent of sober lineage, so as to markedly modify their matured and long-established habit of acting, but in the drunkard's child, who starts unstably endowed by hereditary neuropathic entailment resulting from an ancestor's alcoholic excess, the resistance power of the parent or parents in early life is not in the child's organism. He is a step lower than his father or mother, or both, if they were habitual drinkers, in the scale of organic degradation, and has, in consequence, feeble resistance to the assaults, not only of alcohol from within, but of adverse environments from without, and they reveal this hereditary organic degradation in erratic actions, morbid, insane or criminal conduct—conduct which in them is always the offspring in whole or in part, of disease—disease within. Upon them, consequently, influences without their organisms, resisted by others, have an overpowering force. Their environment leads them irresistibly into crime, like the extraneous circumstances which cause in them disease their parents had not shown, and crime their parents would have resisted.

The drunkard's child's crime is not all his voluntary crime, nor his vice engendered disease, all disease of his own making. His father, or his father's father or mother, may have deliberately chosen that which, with all its voluntary seeming in the boy, is become to him an inexorable morbid fate, appearing as immoral conduct. "The fathers have eaten sour grapes, and the children's teeth are set on edge."

With this too cursory preliminary review of what we know of the hereditary neurotic enthrallment of alcohol, we record an interesting hypothetical case, which we will suppose to cover the facts in an important medico legal record of entailed alcoholic disease and crime perpetrated under its fatal sway.

HYPOTHETICAL CASE.

Suppose a young man approaching his majority, naturally kind of heart, not reared in crime nor in the slums of a city's poverty quarters, but in comfortable circumstances, and fairly educated among correct people, commits an unprovoked murder of one of the dearest and nearest of his friends. In his family the following abnormal traits appear: On the maternal side a grandfather is a man of excess in eating, drinking, etc.; inebriate and melancholy, and he dies of apoplexy. An only son survives him long enough to develop inebriety and die of drink in his youth. A brother is like himself, and dies a drunkard. Sisters and cousins in varying degrees, according to environment, exhibit the same failing. A grandmother at an early age drank liquor to excess, and died prematurely in consequence of excessive drink. All the sons of the grandmother's sisters died young in consequence of drink. Of the remaining ancestry of this alcohol-tainted organism, one uncle was, from early youth, addicted to alcoholic indulgence, his thirst for drink becoming finally insatiable, and he died of delirium tremens in early manhood, after previous attacks of acute alcoholic insanity. An-

other uncle was also addicted, from his early youth, to the use of alcohol to inebriety, and finally became melancholic and insane with delusions of dread and suspicion. Several sisters of these two men were victims of the hereditary failing, among them the mother of the supposed young man we are considering. The boy's father, too, was in early life, before the boy's birth, an intemperate man, and the boy himself was, from early puberty, intemperate, unstable and choreic, and had suffered in childhood from a physical shock to his nervous system, caused by a violent fall. This young man in question, when under the influence of liquor, was a markedly changed man, and when the time of one of his periodically recurring sprees would come around, he was likewise very different from his natural self, being moody, listless, drowsy and melancholy; and after indulging in his inordinate craving and unnatural appetite, he would become exhilirated, reckless of danger, excessively cheerful at times, and extremely violent towards, and suspicious of his best friend, filled with morbid fears, dreads and suspicions. When sober he was nervous, restless and unhappy, and whenever he got a taste of liquor he would invariably drink to excess—drinking to exhaustion, prostration and illness in consequence of his excess. Suppose for five or ten years the life of such a person was almost one continual succession of sprees—suppose such a man, after such a life, and at the close of a several weeks' prolonged spree, takes the life of his best friend by manual violence while struggling to get money from this friend who had refused it, and with the aid of an accomplice takes money, jewelry and other valuables from his person, pawns some of the things for liquor, making no attempt to escape, and not appearing to remember or realize the enormity of the crime committed, remains in the neighborhood of the murder intoxicated until arrested, vaguely remembering the fact of the robbery, but not believing the party robbed and maltreated was dead or seriously injured.

This is a common kind of inebriate crime. This picture would answer for the ordinary portraiture of the average inebriate criminal arraigned in our courts of justice. It is of necessity so drawn as not to describe personal cases that have come under my professional care, but it is true to inebriate nature, as I have seen it all too pitiably and painfully portrayed, and will answer well for a composite picture of morbid, as contradistinguished from purely immoral inebriety and crime. The picture is not overdrawn, but is faithfully true to nature.

I have purposely put in a criminal motive in the above hypothesis that the natural semblance to crime may appear just as it appears in many cases of insanity. The inebriate and the insane person act, unless totally demented, from motive more or less apparent, but the hidden springs of human conduct in both are different from those in the rational and healthy mind. A different combination of morbid influences, ancestral and immediate, in the nervous organism of the chronic inebriate or the periodic inebriate, unites with his environment in the drink-enthralled man, from that which influences and determines ordinary human conduct in sane and temperate men.

1. Assuming the above hypothetical case to be true, what would be your judgment as to the existence or non-existence of hereditary alcoholic degeneracy and impairment of the brain, and the existence or non-existence of dipsomania, or involuntary and resistless impulse to drink alcoholic liquors to excess, in the case of the supposed youth, and degree of irresponsibility from drink?

2. What was the mental condition of the supposed person when he committed this unlawful deed?

3. What is the effect on the mind and on the will of such an inherited taint, united with the state of chronic alcoholism, as in the case of such a supposed youth?

Such, with more or less completeness of specific detail, is the character of the hypothetical case and interrogatories of late years propounded in our courts to the expert in psychiatry, for the neuropathic entailments of chronic ancestral alcoholism. Thanks to an enlightened judiciary in some of the American States, aided by the wise and judicious efforts of our medico-legal societies, inebriety has become a recognized extenuation and often complete and just excuse for crime perpetrated under its potent and often resistless morbid influence, and the following, or something like them, are still the customary interrogatories propounded, *pro forma*, by the counsel for the State:

1. Is it your opinion that such a supposed person was unable to distinguish between right and wrong?

Or, perchance, the more enlightened and just interrogatory, like the following, is offered by the State:

"Will you say that a person so affected could not tell that an act which he committed was wrong, or, if conscious, that it was wrong—is it your opinion *that he was incapable of resisting the impulse to commit it*, by reason of disease hereditarily entailed or acquired?"

It were fortunate for the unfortunate victim of the faulty and imperiously unstable neuropathic heritage of long-continued or hereditarily transmitted alcoholic indulgence, if a wise, humane and considerate counsel and court secure such just instructions in such clear conformity with the facts of clinical observation and experience as the last interrogatory would warrant, for inebriety either in its periodic or continuous forms is a disease, as much so as the recognized and acknowledged phases of insanity, epilepsy, idiocy and imbecility it both directly and indirectly engenders, and while in considering it in its medico-legal relations, we have also to consider the accompanying factor of a once normal volition, we have in the inebriate a mind and will always more or less modified, perverted, or deranged by disease; alcohol being itself a directly toxic agent, in its influence on the brain and allied nervous system, as well as potently poisonous to the blood itself in any considerable quantity, and especially so as all experience proves, when long continued, in excess, in either the individual or his ancestors.

It is, indeed, a strange phenomenon of the human mind in its forensic relations that an agent which the world recognizes and acknowledges as the parent of pauperism, insanity and crime, and the chief direct or indirect populator of penal, eleemosynary and correctional institutions, and the proven cause of so much disease, misery and death, should be held responsible to the extent it is before our judicial tribunals, when the hapless and often hopeless and helpless victims of its vicious power are arraigned to answer for crime committed through its influence over their involuntarily enslaved organisms—organisms often prenatally predestined to pathological perversion (as most of the unfortunate inmates of asylums for the insane are organically predetermined to an aberrant course of life conduct), through the alcoholic excesses or other neuropathic disorders of ancestors, or through a precocious drink-craving, however engendered, whether ancestrally or self-acquired, and prematurely and excessively indulged, to the harm of the delicate machinery of the brain.

The force of physiological habit is recognized in all of our dealings with men. Why, then, should courts

ignore the power of that neuropathic thralldom which alcohol undoubtedly engenders in certain individuals, to their harm and the harm of the world about them, enchaining, enslaving and perverting conduct, until the unfortunate slave of its vicious sway is no more in harmony with his natural self, unperverted by this disease, than the lawfully and justly consigned inmate of a lunatic asylum is?

The dipsomaniac is as surely perverted and deranged in his brain and connected nervous system as any other lunatic, and the confirmed inebriate claims our sympathy and succor and the kindly consideration of the law, because he is the victim of disease. It is for humanity and the law to decide in each individual instance, however, how far on the one hand inebriety should extenuate crime, and to what extent on the other it should punish the volition that may have engendered the disease. It is a plain proposition, which admits of no doubtful interpretation, that acute alcoholism voluntarily and premeditatively induced, or even voluntarily yielded to, for the purpose of committing or shielding from crime, is as culpable as any other criminal intent, while on the other hand a diseased propensity to drink, indulged in obedience to the promptings of a resistless organic aptitude handed down from father to son, or transmitted through the womb of an alcoholized or otherwise neuropathic mother, should receive a different consideration, just as any other neuropathic heritage causing psychopathic perversion, extenuates even the most heinous of crimes in the eye of the law and in the judgment of courts.

Our ancestors in the medical profession rescued the lunatic from the neglect and violence of ignorance: let us protect and save the nerve-degenerate inebriate.

NOTE.—A correspondent of the *Courrier des Etats-Unis* sends from Paris, under date of September 20, 1890, the following mention of a recent trial for homicide, committed in that city under somewhat peculiar circums ances, and of the prompt acquittal of the accused on the ground of mental irresponsibility. We present to our readers a translation:

On April 20 last, at 11 o'clock A.M., a cry for help was suddenly heard to proceed from a house in Park Royal street, an apartment of which was occupied by a widow, aged twenty-seven years, named Bohringer. The neighbors met a man on the threshold of her room who remarked: "You can enter. It is all over with her. There she is,"—at the same time pointing to the young woman, who lay stretched on the floor in a pool of blood. The victim had been struck with a finely-sharpened cold-chisel. After being conveyed to the Hospital St. Louis, she was able to speak but a few intelligible words, and died after an agony of a few days.

The assassin, named Joseph Hahn, a widower and the father of three children, had long paid assiduous court to the deceased, with the expectation of marriage. That he had premeditated the crime was patent from the fact that he had hired a cutler to sharpen the chisel, the day before. It was satisfactorily shown before the court that Hahn was a skillful workman, that his probity was incontestable, that he adored his children, but that, when drinking, he became violent and brutal, destroying or injuring whatever was within reach.

At first sight, the tranquil face of Hahn in no way betokens insanity; but his attitude before the court and the audience was so singular as properly to raise a doubt in this regard.

The following were his replies to questions by the court:

Court. The police report represents you to be an honest man.

Hahn. Yes; I have always been honest. I have never in my life intentionally done harm to any one. But sometimes I drink too much, and then it affects my head, so that I know no longer what I do.

C. Why do you drink?

H. Because I am obliged to associate with the public in order to procure work.

C. You met the Bohringer woman in a Roquette street restaurant. Did you know that she had a lover?

H. No; I did not know it.

C. Did you propose marriage to her?

H. No; it was she who proposed it to me. We were to be married at the end of her term of mourning. We had but two months more to wait.

C. Then why did you kill her?

To this question Hahn at first replied: "I do not know;" and then, gesticulating wildly, he said, amid loud sobs: "I loved that woman as I did my eyes. She deceived me. She had an accepted lover, and I did not know it. She gave me by mistake a handkerchief belonging to that lover. She had consumed my money."

Doctor Ball testified to the limited responsibility of the prisoner. "Hahn," he said, "occupies the very borderland of insanity; he is of so hysterical a temperament that he does not enjoy the full possession of his faculties."

The jury rendered a verdict of acquittal. On the reading of the verdict Hahn appeared astounded and stupefied for several minutes.

WIRING THE SEPARATED SYMPHYSIS PUBIS, SUPPLEMENTED BY A NOVEL PELVIC CLAMP.

By WILLIS P. KING, M.D.,
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I WOULD not deem it necessary under any circumstances to tire the patience of a body of physicians by going over the entire question of fractures of the pelvis, as an introduction to a paper of this character, and I deem it especially unnecessary before a body of men such as compose this association. I will, therefore, be as brief as possible by coming at once to the point. The object of the paper is to report a case of separation of the symphysis pubis, with fracture of the interposed fibro-cartilages, fracture of the descending ramus of the pubis, with deep lacerations of the surrounding soft parts, and, more particularly, to report the methods resorted to in order to support the pelvis and reinforce the sutures after the pubis had been wired together.

Bonnie Jacobs, aged twenty, single, a hearty, well-developed country boy, brakeman on a freight train on the Missouri Pacific Railway, while making a coupling at Harrisonville, Mo., on March 25, 1890, fell down with one leg under a brake beam, and the other over it, holding on to some part of the car with his hands, and was shoved about one car length, the brake beam crushing into the anterior portion of the pelvis, fracturing the descending ramus of the pubis, separating the symphysis, and lacerating the surrounding soft parts, as hereafter described.

He was received at the Missouri Pacific Hospital at Kansas City during the night following, and, as it was found upon examination that there was no hemorrhage, the parts were cleansed and packed with bichloride gauze, his urine drawn off, and he was put to bed until morning. On the morning of the 26th, he was placed upon the operating table and anæsthetized, and a careful examination made. The pubic symphysis was found to be separated about two inches, the inter articular fibro-cartilages were each broken into three or four pieces, the descending ramus of the pubis on the right side was fractured; the inner border of the adductor longus muscle was lacerated, and there were extensive lacerations of the soft parts above the pubic arch, exposing the bladder and extending on the right side into the right inguinal region. These deep lacerations above the pubis embraced the skin and all of the underlying muscles and tissues in the supra-pubic region down to the bladder, and extending upward to the right and left; but the lacerations on the right side extended somewhat higher up than those on the left. The fragments of the fractured cartilages were removed, and the centers of the opposing surfaces of the separated pubic arch were roughened with a chisel—the edges being

[1] Read before the Mississippi Valley Medical Association.

already roughened in the separation; then with a common drill and a small dental tool two holes were drilled in each side. These holes began about three-fourths of an inch back from the edge on either side, and the tool was permitted to emerge just above the inferior surface of the bone. A strong silver wire (the largest made) was then passed through each of these, and while an assistant pushed upon the pelvis from each side, until there was coaptation of the separated symphysis, the wires were twisted down, cut off short, the ends turned down and hammered in between the ends of the bones.

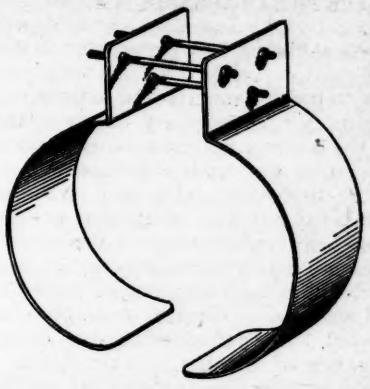
The bladder, having filled with urine during this operation, was emptied, and the deeper lacerated tissues were whipped, quilted and stitched over it with cat-gut. The irregularly torn integument was then drawn into position and closed with silk. Rubber drainage tubes were put in at appropriate points, so as to thoroughly drain the whole injured region.

Feeling assured that the two silver wire sutures in the pubic arch would not be sufficient to hold the symphysis together, the patient was then lifted on to blocks—the blocks being under the upper part of the thighs and lower part of the spine, a half-gallon rubber water bag was filled with water and laid over the pubis—covering the entire wounded surface. Two thicknesses of flannel were then thrown around the pelvis, covering about eight inches in width and passing over the water bag. Over this, plaster of Paris in crinoline was passed, and two perforated barrel hoops were worked in between the layers of plaster. The plaster was put on quite thick, so that there would be no spring in it after it set. After the plaster had hardened, the stopper was taken from the water bag, and the water emptied into a vessel between his thighs, and the collapsed bag removed. This left an ample arch under which to apply the dressings to the wounded parts.

This plaster support was kept on for twelve days; but, as he was delirious and the contents of his bowels moved involuntarily, the back part of the cast became so foul as to necessitate its removal. It was then cut away, and a drawing of a pelvic clamp was hastily made and sent to the company's shops. In the meantime a broad, strong bandage was applied around the hips, extending over the dressings. On the same evening the clamp was received and applied. This clamp was of steel plate, one-eighth of an inch in thickness, and was in two parts—each being fashioned after the plaster of Paris cast, which had been sent to the shops. Each part extended over the curve of the hip so that it would not slip up when tightened. The lower part rested on the bed, but did not extend under the body. Each part embraced the pelvis on its side, curved up and over to the iliac fossa, and then turned to a right angle upward. The flat surface of this part faced a similar flat surface on the opposite side, and when applied without being tightened were about five inches apart. Through these surfaces three holes were made in the form of a triangle, and bolts, with screws, cut on each end, passed through. The three bolts were necessary, because I knew that, with one or two bolts, the clamp would rock and would, therefore, not serve the purpose for which it was made. Taps were put both on the inner and outer side. The reason for this is obvious.

The hips being neatly padded, the clamp was applied, and the screws being tightened, it was found to be not only an excellent support, but that we could apply as much or as little pressure as was desirable. The supra-pubic wound (which had not all healed by the first intention) was dressed beneath the connecting rods.

This pelvic clamp was kept on until the thirtieth day after the injury, when, as it appeared that there were perfect union of the symphysis, it was removed.



The patient was delirious for twenty-eight days. He urinated in the dressings, necessitating a change of the dressings two and three times in twenty-four hours. Of course we had suppuration; but, as our drainage was perfect and permitted a thorough irrigation of the wounds, we were enabled to prevent the burrowing of pus, as well as to prevent the spread of septic material in the surrounding soft parts. For the first thirty days he had more or less temperature—the fever at one time rising to 105° Fah.

He was kept on a water bed from about the end of the first week until he was able to leave his bed as a convalescent. There was suppuration at the point of fracture of right descending ramus of pubis, and where a portion of the adductor longus muscles was lacerated; for a long time pieces of detached necrosed bone coming away at times. He left his bed for an invalid chair at the end of about five months. Within three weeks after this he began to use crutches, and ten days afterward he threw his crutches away and used only a cane. Now (for the last two weeks) he is walking up and down stairs—everywhere—without any support. He is growing strong rapidly, and, I feel assured, will in a short time be ready for any duty.

Drs. F. R. Smiley and Geo. F. Hamel, my house-surgeons, assisted in the operation of wiring, and Dr. Hamel took personal charge of the case, and the good result is due largely to his indefatigable and unwearying attentions at all times, day or night, when the patient's condition demanded it.

The case suggests some valuable points:

1. The operation of wiring in a case of separation of the pubic symphysis so completely coaptates the parts that it would seem that scarcely any other method of dealing with this condition can be equal to it.

2. The manner of applying the plaster of Paris support in the first place, with the use of the water bag to make an arch under which to dress the wounded parts, is new and original, so far as I know, and is a method that may be adopted and easily practised by any one who knows how to use plaster of Paris.

3. The steel hip clamp as a permanent support in separation of the pubic symphysis is also new, so far as I know, and is a means that may be adopted with benefit in any case of fracture of the pelvis, where immobilization of the fractured part will contribute to the comfort of the patient, and to the union of the fracture.

DR. R. J. LEVIS died, November 12, of pneumonia.

TREATMENT OF EPILEPSY.[1]

By PHILIP ZENNER, A.M., M.D.,
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IN order to judge properly the effects of remedies on epilepsy it is necessary to study the natural course of the disease, and how other influences than therapeutic measures modify the disease.

According to Nothnagel 4 to 5 per cent. of the cases of epilepsy get well without treatment. Various pathological processes may favorably modify the disease. Acute febrile processes sometimes cure it, and, generally, cause a temporary improvement. Injuries and wounds, or surgical operations are likely to be followed by lessened frequency, or a longer or shorter absence of the fits. A change of scene or place, entering an asylum or hospital, or the administration of a new drug, are likely to cause temporary improvement.

The success of therapeutic measures depends largely on the form of disease presented. *Grand mal* is much more amenable to treatment than *petit mal*. The latter, and cases with mental symptoms, are usually very intractable to treatment. The shorter the duration of the disease, and the smaller the number of attacks, the more favorable is the case for treatment.

The etiological factors are exceedingly important in relation to treatment. In all cases there is a constitutional vice, either hereditary or acquired, without which the disease would not exist. Besides this there is, in many cases, a peripheral source of irritation which, in a reflex way, excites the attack, and may even have produced the constitutional condition. Among such conditions may be mentioned injuries and wounds, disturbances in the digestive tracts, various genito-urinary diseases, eye strain, disease of the nasal mucous membrane, etc. Very often too much weight has been given to such conditions, and even harm done in their treatment, but we must also be careful lest we run into the other extreme, and give them no weight. Each case must be individualized and carefully treated on its own merits. But in all cases, whether such local disease be found or not, treatment for the constitutional condition should be applied, chiefly proper hygiene and hyrotherapy.

With this treatment we may succeed in many cases without further medication, especially when there have only been a few convulsions. But in the chronic cases we must add some of the anti-epileptic drugs. The number of such drugs which have been handed down to us is very large. The most important of those of the pre-bromide period are nitrate of silver, oxide of zinc, digitalis, and belladonna. Of these belladonna is the most used to-day, and is often a valuable adjuvant to the bromide treatment. Digitalis is more or less in use, being of greatest value in cases with weak hearts and feeble circulation. But the bromide treatment has supplanted all others to-day, and is far more effective in the majority of cases. As to the size of the dose there is great variability, some not bearing small doses well, while others can take four or five drachms daily for an indefinite period. There is but one rule to follow, to give large enough doses either to entirely control the disease, or to produce slight bromism. It is best to begin with small doses, one drachm two or three times a day, and gradually increase until the desired effect is obtained. Sometimes the medicine seems to lose its effects with time; then an increase is necessary. After learning what dose can be borne, or is effective, the medicine should usually be continued in same doses for a long time. When the convulsions only occur at stated periods, as during the menses, it is well to give large doses for a few days before the attack is expected, and in the interval give smaller doses. If no more convulsions appear, two or three years should be allowed to elapse since the last fit before beginning to gradually reduce the medicine. If the convulsions recur at times it may be necessary to continue the medicine for life.

The medicine should not be discontinued suddenly, unless for urgent causes, as such a withdrawal may be followed by severe recurrence of the disease. If it be necessary to reduce the drug for other reason than its long control of the disease, it is best to substitute the deficiency with some other anti epileptic drug. Seguin speaks very highly of chloral used for this purpose. He often substitutes from one fifth to one-half of the bromide dose with an equal quantity of chloral, and thinks the combination has a greater control of the fits, and less ill effects, than the larger doses of bromide.

The ill effects of the long-continued use of the bromides can often be averted with care. The disturbances in the digestive tract can often be avoided by very largely diluting the drug, preferably in alkaline waters. Cutaneous eruptions need usually not interfere with the treatment. Sometimes they can be controlled with arsenic. The blunt condition of will and intellect is often less noticeable after the system becomes accustomed to the bromide, or can be improved by slightly diminishing the dose. The same is true of the altered disposition, irritability, etc., sometimes manifested after the fits have ceased to appear. Any tendency to impaired nutrition may, perhaps, be avoided by administration of cod liver oil tonics and nutritious food, and a weak heart may be supported by digitalis.

If great attention is paid to details and the patient can be persuaded to persevere in the treatment—always a difficult matter—most cases can be benefited, and in quite a number a practical cure, and in a few an actual cure can be effected.

The bromide of potassium is the kind of bromide in most common use, and is very effective, but on account of its having a less depressing effect on the heart the sodium salt is often preferred. A mixture of the bromides of potassium, sodium, and ammonium is a favorite combination.

Other bromide preparations, bromide of gold, of nickel, etc., have, as yet, had no extensive trial.

A number of other drugs have appeared in the medical journals in the last year or two in connection with the treatment of epilepsy. Borax, though not a new drug, has been tried at many hands, in some instances with favorable effects, in others unsuccessfully. It is given in from ten to thirty grain doses. After long use it is liable to produce ill effects, as disorder of the alimentary tract, cutaneous eruptions, impaired nutrition, etc., which may be averted to some extent by largely diluting the drug, arsenic, cod liver oil, etc. The author tried it in a number of cases with apparently favorable effects, but the time is yet too short to tell any thing of its real value.

Amylhydrat was found very valuable in the status epilepticus. Antipyrine, antifebrine, and some other drugs recently used seem to have a temporary but not a permanent control over the fits. Probably many of these remedies will assist us where a temporary

[1] An abstract of a paper read before the Mississippi Valley Medical Association at Louisville, Kentucky, October 10, 1890.

suspension of the bromides is necessary, and perhaps they may prove to be of value in combination with the bromides. Amadel states that for four months no convulsions occurred in the asylum at Cremona since he combined the antipyrine with the bromides.

Surgical Treatment: Operative procedures which have been long cast aside, and ligature of the vertebral arteries whose value is, at least, doubtful, were brought into review.

Trephining for epilepsy is one of the oldest operations of surgery. At one time it was resorted to in any or all intractable cases. Thus brought into discredit for a long time it was scarcely done at all. To-day it is done with more discrimination.

It is now resorted to chiefly in traumatic cases. The success denoted by statistical tables is misleading. Most reports are made within a short time after the operation, whereas a number of years should be allowed to elapse before a cure is pronounced.

The author believes those cases to be appropriate for an operation in which the lesion is a limited one, its location ascertainable, and its removal possible; that is, the operation must have a distinct and definite purpose, the removal if a source of irritation. The location of the lesion should be indicated by either local symptoms, such as local pain or tenderness, reflex phenomena, convulsive movements, or fully developed convulsions produced by pressure over the source of irritation, etc., or nervous (cortical) symptoms such as monaspasm (Jacksonian epilepsy), monoplegia, aphasia or sensory, ocular, aural symptoms, etc.

The object of the operation should be the removal of the source of irritation, the extirpation of the entire area of the disease. In order to do this it may be necessary to remove, in connection with the cicatrix, surrounding brain substance.

Those cases are more favorable for a complete cure where the epilepsy is of the Jacksonian type, because it is more likely that the lesion is quite circumscribed, and that with its removal the disease will be eradicated. When the epilepsy is of the ordinary type there is the probability that the disease has been fully engrafted in the system and will not disappear with the removal of original source of irritation. For similar reasons there is a greater probability of success if the operation is performed soon after the injury than if performed at a later period.

Operations have also been made in a small number of non-traumatic cases where the disease was of the Jacksonian character. The idea is to remove the cortical center wherein the disease appears to be located. It is yet too early to say whether this operation will have a future.

SPONTANEOUS (NON-INSTRUMENTAL) ACCESS OF BACTERIA TO THE BLADDER

AND SLIGHT VESICAL INCOMPETENCE AS CAUSES OF CYSTITIS, ESPECIALLY IN THE FEMALE, WITH REMARKS ON TREATMENT OF THE RESULTING DISEASE.[1]

By R. VAN SANTVOORD, M.D.
NEW YORK CITY.

THE writer reviewed the literature of spontaneous bacteriuria, *i. e.*, of cases in which, in the absence of specific disease, bacteria for the most part indistinguishable by ordinary microscopic examination from those usually found in decomposing urine were present in freely passed urine. Stress was laid especially on a paper read by Dr. Wm. Roberts before the International Medical Congress in 1881, in which he distinguished between two forms of spontaneous bacteriuria, in one of which the urine settled clear after being passed; in the other it remained turbid, resembling urine undergoing decomposition. In the former the symptoms of vesical disease were cured or greatly relieved by salicylate of soda, the bacteria disappearing entirely or almost entirely with the relief of symptoms. In the second class no effect was produced on symptoms or bacteriuria by the same drug.

The writer of the paper cited cases from his own experience illustrating these two forms of disease, and confirming Dr. Roberts' conclusion as to the effects of the salicylates.

In two cases of the second form of the disease it was pointed out that for months before the development of acute symptoms the patients complained—in one case of foul smelling urine and slight vesical irritability; in the other, of slowness and effort in the act, the urine being turbid on being passed. Slight vesical atony, spontaneous invasion of the bladder by bacteria, whose multiplication in that organ was rendered possible by the residual urine and final transformation of slight irritation into an acute inflammation under the influence of apparently trifling exposure, seemed to be the most rational explanation of the clinical course of these cases.

The treatment consisted, first, in doing away with the vesical atony by the use of strychnine and cantharades, and possibly electricity. The tenesmus attending acute symptoms might in itself be a useful factor in stimulating vesical contraction. It should not be entirely suppressed by too free use of narcotics, nor should large vesical injections be used for the same reason. The bacteria would vanish when the bladder became able to fully empty itself, and when the products of inflammation which furnished appropriate nourishment for them ceased to be formed under the influence of appropriate treatment. Injections of antiseptics, strong enough to be bacteriacidal, were too irritating. All the bacteria were not reached, and the inflammation was aggravated by them.

The cases cited were probably common varieties of disease. The existence of slight vesical atony might be difficult to demonstrate in the female, and was probably more frequent than the current literature would lead one to expect. The recognition of bacteriuria, especially of the second variety treated by Dr. Roberts, was of value as pointing with great probability to this condition.

DR. VAN SANTVOORD'S PAPER.

Discussion.—Dr. Martin considered the cases reported by Dr. Van Santvoord similar to three that came under his observation. They were in females, and the condition of the urine in all three showed the presence of bacteria, and in two of pus. They were put on the internal administration of salol, benzoic, and boracic acid, three grains of each, four times a day, and all three got well. He mentioned this to bear out the statement that this condition is not so uncommon as was supposed.

Dr. Manley said that it was now the generally accepted view that bacteria are the exciting agents in the production of inflammation in those parts which have a direct communication externally, as, for instance, the pharynx, nasal passages, bladder, rectum, etc. Accepting this theory as valid, the treatment

[1] Abstract of paper read before the Harlem Medical Association October 1, 1890.

would be very simple. First, destroy these bacterial elements, and second, to prevent their multiplication or return. The great difficulty is to get something which will act as a bacteriacide, and not at the same time poison the individual. Then get the parts in such a condition as to make it impossible for the bacteria to thrive. Dr. Van Santvoord, he thought, placed very little reliance in direct applications—internal antisepsis of the bladder by internal agents. His experience in dealing with vesical troubles had been quite contrary to the doctor's in that respect. There were two things he found of great value in vesical irritation—drinking large quantities of water, which not only serves as a diluent in the bladder, but washes out whatever micrococci may lodge in the mucous membrane of that viscus, and next, the use of ordinary diuretics, such as buchu and squibbs. They know these act energetically on the kidney. He thought it would be well in cases that resist all medicinal treatment to resort to the method recommended by Dr. More Madden, of Dublin, giving rest to the sphincter by surgical interference, or do a suprapubic operation, as advised in the case of an adult by McGuire, of Richmond, Va. If the disease was of microbic origin, the way to do was to find the proper antiseptic, and then surgical interference would not be warranted. He had been very much instructed by the paper of Dr. Van Santvoord, and felt the association would appreciate its true value.

Dr. Van Santvoord stated in conclusion that he did not wish to be understood as advocating the view that spontaneous invasion of the bladder in these cases by bacteria was the sole cause of cystitis. He did not regard bacteria as the primary and only cause of cystitis. It was, of course, the general opinion that vesical atony was a predisposing cause of cystitis, and in the paper he wished to emphasize that he believed it to be *frequent*. He supposed bacteria get into the bladder when there was a little residual urine and multiply. Probably a slight amount of multiplication does no harm if there was not enough residual urine to set up irritation. As for the cases being common, he believed they were very common, and on that account were of interest. Dr. Roberts has stated there was a certain class of cases in which the salicylates were of the greatest value, while in others they were of no value at all. The difference between the two classes of cases was that in one there was probably considerable atony of the bladder, while in the other there was none. In the latter case it was, he thought, a question whether bacteria had anything to do with the symptoms.

Society Notes.

ALLEGHENY COUNTY MEDICAL SOCIETY.

Special Meeting, September 16, 1890.

G. W. ALLYN, M.D., President, pro. tem., in the Chair.

DR. W. C. BANE: On the 13th of February last, there was brought to my office, upon the recommendation of Dr. C. B. King, a rather delicate girl, whose vision was apparently very defective. Upon my record-book I find the following memoranda:

L. R., aged fourteen. Use of eyes for near work causes them to ache, also smarting of the eyelids. Dread of light, or photophobia, during the past three weeks. General health not good. Rather tall for her age, and anæmic. Had never menstruated. History of vision always being defective, but worse during the past year. Examination revealed slight congestion of the palpebral conjunctiva. Vision R. & L. E. $=\frac{1}{36}$ or $\frac{1}{120}$. With the ophthalmoscope the fundus of each eye appeared normal.

Office hours being up, I prescribed for the congested conjunctiva some boric acid in aq. menth. pip., with the understanding that she should return in a few days. February 20, I tested the eyes with lenses previous and under a mydriatic, with but slight improvement in vision. The patient seemed intelligent, and the eyes appearing to me to be quite normal, I was at a loss to know why the vision did not correspond. In my perplexity I placed in front of the right eye—the left one being shaded—a-4.50 D. cyl., which at axis 120° enabled her to see $\frac{1}{6}$, Snellen, the card being placed within a meter of her eyes, as beyond that distance she seemed unable to name any of the letters on the test-card. At this point I stopped and requested that she return in a week or ten days.

March 3, 1890. With the test-card at the proper distance, twenty feet, I commenced where I left off at the last examination, by placing the — cyl. in front of the right eye. At this time she could see $\frac{6}{60}$ or $\frac{20}{200}$. I now gradually reduced the strength of the — cylinder, by placing plus cylinder in front of it. Gradually the patient's vision came up, until when I had the equal of a plane glass in front of the eye, the vision was $\frac{20}{20}$, or normal. I next proceeded to correct the left eye, and in doing so proceeded as with the right eye, and when the lenses equaled a plane glass, she could see $\frac{20}{20}$. Her near vision was likewise quite normal. Without stating to the patient what glass was in front of her eyes, I wrote the following:

R.—R. & L. Plano.
P. D. 60 mm.
Constant.

I now prescribed for her, with the consent of Dr. King, what is familiarly known as Basham's Mixture.

On March 10 the patient returned, eyes well opened, photophobia slight. Vision normal.

April 18. Patient has continued to take the tonic. General health much improved. Continues to wear the spectacles. Vision normal.

The case was an interesting and instructive one to me. She was so innocent in her manner, and seemingly honest in her answers to my questions, that I did not feel that I ought to say to her that I had reason to doubt her. The expense of the examination was being borne by a friend of hers.

DR. ALLYN: Two years ago a boy, but eight years old, was brought to my office complaining of trouble in seeing the blackboard in school. Without a glass before the eye he could not see the test-card, while a simple plane produced normal vision. On removal of the plane his vision disappeared again. This I repeated until satisfied that there was no trouble with his eyes.

DR. PAINTER: I have a case with one interesting point. It is of a married woman, aged twenty-seven, who came to me with a history of suppurative tonsilitis. One tonsil went to the formation of an abcess, which broke, the other going through the inflammatory process, but not forming an abscess. A month subsequent to this she came to me complaining of a difficulty of deglutition and impossibility of swallowing liquids; they would be ejected through her nose; and in extinguishing a lamp the expired air would go through her nose, not out of her mouth. She had a marked nasal intonation. The soft palate was

abnormally flaccid, and insensible to the touch of the probe, as was also a portion of the pharynx. She was treated with electricity (the Farradic current), and was given strychnine, the doses being increased until the physiological action of the drug was brought about. The only point of interest in the case is that the suppurative form of tonsilitis had this sequel of paralysis. She got well speedily, as probably she would have without any treatment. She was pregnant seven months, and badly needed liquids, of which she was deprived by the paralysis, and rest to her mind, so that active treatment was indicated.

DR. W. C. SHAW: A child, born the 16th of July. A few days after birth the mother called my attention to a lump in its throat just above the hyoid bone. Some time afterward it increased in size, and I punctured it with a small instrument, and clear fluid passed through. I gave some syrup of iodide of iron and phosphate of lime, a few drops every day. In about two weeks she brought this child to me a second time, with this cyst refilled. Last night she brought the child in the third time. I opened the cyst, and, instead of a clear fluid, got bloody fluid. It might be called a congenital cyst.

A boy, eleven years of age, was picked up, injured in the collision of a buggy with an electric car. He was bleeding profusely from his nose and his left ear. He had laceration of both ears and a scalp wound. I remarked at the time that the boy might pass for one suffering from a fracture of the base of the skull. Two or three days after there appeared an ecchymosis on the left of the eyelid, and extending up over the forehead. I was dressing his ear and made a little pressure over the meatus, and he complained of severe pain in his ear. He was also deaf in the left ear; could not hear a watch tick an inch from his ear. He gradually recovered, and did not have serious complications, if he had fracture of the base of the skull. But now, to-day, I called at the house to make my last visit, and his mother spoke of his going down last evening from the steps to the pavement, and as he stepped on the pavement he complained of a jarring in his head again, and of quite a severe pain in that ear. I still think that boy has a fracture of the base of the skull.

While speaking of injuries in the region of the neck, I have lately noticed in cases in this neighborhood of cutting of the throat, that some of the surgeons have performed tracheotomy. I rather think that that is an addition to the injuries, and more likely to do harm than the original trouble. I do not think tracheotomy necessary. One hospital case I remember was a curiosity. Every time any one wanted to see the vocal cords work, they would go into the ward; we would remove this man's bandages, turn over his neck, and get him to exercise the vocal organs. We could see the vocal cords working nicely. Now, if that case had occurred in this neighborhood, some of the surgeons would have operated upon it and introduced a new danger.

DR. O'BRIEN: I am reminded to report a case which occurred in my practice a couple of weeks ago. A child was playing in a new building, and had climbed up a partly-built stairway and tumbled over to the ground below, a distance of fourteen feet, and fell upon some loose stones that lay there. I found the child had a contusion on the left parietal bone, and also at the temple. There was considerable swelling and a sub-cutaneous bleeding, so that the skin was quite tense over the point of injury, and I was unable to determine whether the skull had been fractured. However, there was complete right hemiplegia. The injury was on the left side of the head. The child could not move the right hand or foot at all. Was entirely speechless, and the tongue lay on the right side of the mouth, and if asked to protrude it, protruded to the right. The eye-balls turned to the right. There was no stertorous breathing. Believing that it was probably an injury to the meningeal artery, and hemorrhage, I suggested a consultation, and that Dr. McCann be called. He came in a few hours, and she was by that time slightly improved. She could just move the fingers of the right hand, but could not be induced to take anything in her hands. The doctor advised waiting, and after two or three days the movements began to return, and the child recovered ultimately complete use of the limbs. An interesting observation I made was that when it began to speak again it had not forgotten the nouns, as most cases of cerebral injury do. The child asked for what it wanted, and constructed a complete sentence the third day after the injury. I think that in the case there had not been much hemorrhage, and in all probability the explanation of it was that the blow received by the parietal bone had simply contused the cerebral substance.

DR. AYRES: In regard to Dr. Shaw's second case, in which he seems to think the boy suffered fracture of the base of the skull, I should differ with the doctor. It does not appear the symptoms were severe enough to venture an opinion of that kind. The vital centers are most likely affected in fracture of the base, and death is almost certain to result. I would mention here that a series of extremely interesting articles have been recently published in the *Lancet*, on fracture of the skull. In Dr. Shaw's case, I think some slight hemorrhage was the nature of the trouble. With regard to the case on which Dr. McCann did not operate, it was certainly an interesting one, and shows the importance of going slowly with regard to using instruments for cutting into the brain. I suppose many surgeons would at once have proceeded to operate. I am rather inclined to think there was in this case a little hemorrhage.

DR. MCCANN: The case was one in which there was probably a minute hemorrhage, or that condition which is recognized as commotion or contusion of the brain. At the time I saw it, the child had paralysis and loss of speech, but still there was nothing which warranted brain proceedings. We, therefore, deferred operation, with the result the doctor has stated. The bones of a child are so very flexible, breaking with such great difficulty as compared with the bones of an adult, that you can readily understand how a certain amount of bending or yielding under force might occur without an absolute fracture of the skull, and still lead to contusion of the brain substance, which would bring about a paralytic condition more or less permanent, but which is liable to be gotten rid of in children. The brain is likely to accommodate itself to pressure. In a simple fracture of the skull, even with some depression and without symptoms, I should hesitate about applying the trepine in a child, whereas in an adult I should not hesitate if there was a marked depression. Of course, in a compound fracture of the skull in a child, I should not hesitate resorting to operation and an endeavor to remove the depressed fragments of bone, if necessary, to give outlet to any blood which might be concealed, and should not hesitate to open the dura for the purpose of relieving the pressure. But where you have to deal with a simple fracture with marked symptoms, but without any positive evidence of fracture at a given point, I think it is well to go very

slow in operating upon a child. I remember an instance where the parietal bone was driven down upon the brain over the ear, in which the child lay insensible for three days, and which, after elevation and removal of the bone, the cerebral symptoms passed off, and the child recovered entirely. I reported to this society, a few years ago, an instance in which a large portion of the parietal bone was driven down on the right hemisphere of the brain, destroying the right motor center for the arm and for the leg and face, but not destroying the speech center, in which there was, I think, half an ounce of brain substance torn from the brain, with an immense tear in the dura, leaving a cavity into which I passed my little finger to search for fragments of bone in the brain. Without any expectation of recovery, I introduced a drainage tube into the brain and stitched the wound up. Very much to my astonishment, my patient recovered, and with power in the leg sufficient to enable him to walk. He has never recovered power in the arm. His speech has not been seriously affected. I cannot see that there is any necessity for treating a fracture of the skull as an open wound. The dangers of sepsis are very greatly increased, whereas by closing the wound and draining, thereby giving exit for any fluid which may flow out as a consequence of the damage, certain sources of danger are eliminated; and at the same time you can protect your wound effectually, so that you leave your patient very much as if he suffered from a simple fracture.

The Polyclinic.

MEDICO-CHIRURGICAL HOSPITAL.

FOR gonorrhœa Shoemaker advises cleaning the parts with a hot solution of common salt, and the use as an injection of three grains of corrosive sublimate to six ounces of water. Internally he advises the use of terebene in ten-drop doses three times a day, in capsule or on sugar. In a gleety condition the combined use of terebene and belladonna, he thinks is probably the best treatment. He instanced a case of gleet which had been treated by all the best venereal specialists in this country, which was finally cured by Ricord, of Paris, by the use of belladonna in one-drop doses four times a day, increased to three drops three times a day. Terebene, he says, has not only a most decided action on the gonococcus, but has also a soothing and sedative influence on the mucous membrane of the urethral tract.

In a severe case of acne associated with rosacea Shoemaker advised and prescribed as follows: Wash the face in hot water, as hot as can be borne. Drink a cupful of hot water upon retiring and upon rising. Have the pustules punctured by a physician; the incision thus produced will not cicatrize, whereas, if they are squeezed, they heal with a scar. Take internally:

℞.—Liq. potassii arsenitis,
Tr. nucis vomicæ.....āā gtt. lxxij.
Aloini..... gtt. ij.
Aq. menthæ pip.....q. s. f℥iij.
M.—Sig. f℥j ter in die.

Apply externally:

℞.—Acidi borici..... ʒj.
Lanolini..... ℥ij.
Ol. eucalyptol..... gtt. v.
Ung. zinci oxidi..... ℥j.
Bismuthi subnit..... ℥j.
M.—Sig. Ft. unguentum.

For a case of herpes induced by a remote traumatism Shoemaker prescribed, internally:

℞.—Ext. malt..... f℥j.
Elix. ferri lactatis..... .. ℥ss.
M.—Sig. This quantity thrice daily.

Externally, to allay the inflammatory action of the integument:

℞.—Cocainæ... ..... gr. ij.
Sulphuris subl..... gr. x.
Zinci carbonatis..... ℥j.
Marantæ..... ℥j.
Pulv. camphoræ..... gr. x.
Ung. aquæ rosæ,
Ung. zinci ox. benz.....āā ℥ss.
M.—Ft. ung.

A few pointers on the method of urethral injection: Never use a glass syringe. I give preference to Goodyear's rubber syringe, which has bulb shoulder on its nozzle, thus preventing the nozzle from entering too far into the urethra. Warm the injection fluid before using. Do not overfill the urethra. Never stroke under surface of urethra after injecting, as is advised in the books. Never use injections until the acute stage is passed. Never give injections which irritate or burn.—*MacConnell.*

Continue medication for gonorrhœa ten days after disappearance of all symptoms.—*MacConnell.*

MacConnell gave the following as the latest and best internal treatment for gonorrhœa:

℞.—Salol ..... ʒj.
Oleores. cubebæ ..... ʒj.
Copaibæ..... ʒj.
Aluminis..... ʒiv.
Pepsinæ sacch..... ℥ss.
Ol. gaultheriæ..... gtt. x.
M.—Ft. capsul No. xx.
Sig. Two every three hours.

This treatment prevents the occurrence of gonorrhœal rheumatism. The salol is slightly decomposed by the gastric juice, but is actively decomposed by the intestinal juices into salicylic and carbolic acids, thus acting as an antiseptic in the urinary tract through which it is eliminated.

In delivering a child allow the membranes to remain intact until the head is delivered. The hydrostatic pressure of the fluid in the sac aids in the dilatation of the vagina and perineum.—*Montgomery.*

Where astringent injections are used in the vagina albuminates are formed, which accumulate and decompose unless the vagina is daily washed. For irrigation use solutions of zinc chloride, or of lead acetate, forty grains to the ounce.—*Montgomery.*

A granular vaginitis occurs in women of full habits. This should be corrected. Reduce their diet, otherwise topical treatment will be inert.—*Montgomery.*

Vagrant pains are either due to a toxic element floating in the blood, or to some systemic cause acting generally.—*Waugh.*

For an ulcer of the stomach Waugh prescribed 1-100 grain of the arsenite of copper to be taken after meals, continued for a long time.

Prof. Keyser is not to be prevented by dark and cloudy weather from giving a good, practical eye clinic. While abroad this year he purchased an electric illuminator, by the light of which he can perform all eye-operations, however dark the sky.

For a woman fifty-two years old, complaining of a loss of appetite, vagrant pains, flatulency, constipation and "load on stomach" after eating, Waugh prescribed as follows, with a view to increasing the digestive function and the peristaltic action of the intestines:

℞.—Maltine..... fʒss.
Cascara sagradæ..... ʒss.
Strychninæ sulph..... gr. $\frac{1}{10}$.
M.—Sig. One dose, repeated thrice daily.

Do not make cold applications to a crushed limb, lest sloughing be induced.—*Goodman.*

For a child, eight years old, suffering from debility after an attack of acute Bright's disease, Hollopeter prescribed the following:

℞.—Tr. ferri chlor..... fʒj.
Acidi acetici..... fʒij.
Strychninæ sulph..... gr. ⅓.
Liq. ammoniæ acet..... fʒiss.
Syr. tolutani.....q. s. ad fʒiij.
M.—Sig. ʒj every four hours.

Inhalations of chloroform are invaluable in arresting convulsions in children of two years or under. Give them a whiff of it while in the convulsion. The paroxysm having been broken, the following should be given to prevent recurrence:

℞.—Sodii bromidi..... ʒj.
Chloral hydrat ..... ʒss.
Aq. menthæ pip.,
Syr. tolutani.....āā fʒiv.
M.—Sig. fʒss.; one every half hour until child is quieted down.

—*Hollopeter.*

Keyser presented a case of divergent strabismus, due to hypermetropia. As a rule, he said, divergent strabismus is due to myopia, while convergent strabismus is due to hypermetropia. Concerning the prevention of strabismus he remarked: "A child never sees anything sharply until it is three or four years of age, according to its precocity. If at this age any error of refraction be corrected, nature will correct the squint. There should be no hurry about operating. Glasses should be worn six months to a year before an operation is thought of. If you operate too early a squint the opposite of which you intended to correct may be the consequence."

In needling a soft cataract, known as the discission operation, the first operation should consist of but a gentle puncture of the capsule, made by a drilling motion of the needle. Better do a dozen such operations than to slit the capsule and lose the eye. The aqueous humor will pass through the puncture into the capsule, producing pressure and consequent absorption of lens.—*Keyser.*

In removing a dressing from an injured eye do not do so in a bright light.—*Keyser.*

A teaspoonful three times a day of the Elixir Ferri Pyrophosphatis will remove styes.—*Keyser.*

For eczema of the limbs, due to a varicose condition of the veins, give of the extract of hamamelis, gtt. xx., in a teaspoonful of glycerine, t. i. d., and apply the following ointment, supporting the limb with a bandage:

℞.—Beta naphthol..... gr. x.
Camphoræ..... gr. x.
Ung. hydrarg. nit..... ʒij.
Ung. aquæ rosæ..... ʒj.

—*Shoemaker.*

For eczema marginata give hoang nan internally, and apply to affected parts:

℞.—Ol. cadini..... ʒj.
Acidi borici..... ʒss.
Ung. zinci ox. benz..... ʒj.
Hydrarg. ammon..... gr. x.
Ung. aquæ rosæ..... ʒss.

—*Shoemaker.*

UNIVERSITY OF PENNSYLVANIA.

IN a recent lecture on dyspepsia, Dr. Pepper said: "One of the most frequent causes of dyspepsia is the constant use of irritating substances, such as tobacco, alcohol, and highly-seasoned food. Tobacco and strong tea and coffee act both by depressing the nerve force of the stomach and, if swallowed, by directly interfering with the digestive processes. It will not be disputed by any fair-minded person that tobacco, tea, and coffee are injurious when taken in excess. It must be admitted that the majority of men, in a state of health, can use a certain amount of tobacco without injury. This amount varies with the individual, but is in any case small. I cannot speak too strongly against the filthy and disgusting habit of chewing tobacco. It is hard enough for a fastidious patient to endure a physician whose clothing reeks with the perfume of choice Havana cr cigarettes, but when the mustache is stained with tobacco juice, and the doctor is spitting while in the sick room, it is unbearable. No physician ought to be seen with a quid of tobacco in his mouth. There is no doubt that some men are benefited by a moderate use of tobacco. They are lacking in will power, and must have some vice or habit. The tobacco habit is the least harmful, makes them happy, and keeps them from something worse.

"The habit of expectoration is a distinctively American habit. It is seldom seen abroad, but is so common in this country as to invariably attract the notice of foreigners. It is an entirely useless habit, nothing being formed in the mouth during health that is not intended by nature to go into the stomach and aid in the digestive processes. Every bit of saliva ejected from the mouth is a direct robbery of the stomach."

Dr. Hirst gives as an equivalent of human milk.

Cream..... fʒiv.
Cow's milk..... fʒij.
Water..... fʒj.
Milk sugar..... gr. 1.

Sterilize by steaming for twenty minutes, and before using, add lime water, fʒij.

Dr. Hare gives for acute stage of bronchitis in children:

℞.—Tr. aconiti..... gtt. xij.
Syr. ipecac..... fʒss-j.
Liq. potassii citratis.....q. s. ad fʒiij.
M. and S. One teaspoonful every three hours.

For the later stages:

℞.—Ammonii chloridi..... ʒj.
Ext. glycyrrhizæ fl..... fʒiv.
Aquæ dest.....q. s. ad fʒiij.
M. and S. One teaspoonful three times a day.

A favorite dispensary prescription for diarrhœa is:

℞.—Salol..... ʒij.
Bismuthi subnitratis ..... ʒiv.
Mist. cretæ.....q. s. ad fʒiij.
M. and S. One teaspoonful every two hours.

The Times and Register

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WILLIAM F. WAUGH, A.M., M.D., Managing Editor.

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ARE THE PROTOZOA IMMORTAL?

SOME years ago Weismann made the remarkable claim that protozoans were not subject to the ordinary laws governing animate objects, in that they did not experience death, except through accident. These unicellular organisms reproduce by bipartition; each half becoming a new creature; and as this process is continued indefinitely, there are really no deaths in the protozoan world, except such as were due to violence. The same thing is true as regards the sexual cells in metazoans. While the somatic cells in time perish, the sexual cells belong to the protozoan type, multiply by fission, pass from generation to generation, through the mediums of the fecundated ovum, and are hence immortal.

Quite recently, M. Maupas has attacked this theory, and claimed that natural death, due to senile decay, obtained among the infusoria. In 1860 Balbiani observed that reproduction by fission was limited by the simultaneous death of all the individuals belonging to the same cycle, by the renewal of life through the occurrence of sexual generation, thus beginning a new cycle, or finally by encystment, which causes a temporary interruption of the process of fission.

Now, Maupas shows that no element in the infusoria can live indefinitely and independently. The first visible evidence of degeneration is a reduction in the size, with change of contour. The nucleus is the first to undergo atrophy, and finally disappears. But, as Binet observes (*The Monist*), when the vitality of the infusoria has become weakened by a considerable number of organic reproductions, and the animalculæ are upon the point of dying a natural death, a new biological phenomenon can intervene, rejuvenating the organism, and rendering it capable of reproducing itself anew for a long series of generations. That phenomenon is fecundation. And since the substance, the protoplasm, of the rejuvenated individual escapes death, a new argument might be found in these last mentioned facts for the theory of the immortality of infusoria.

The question is at bottom whether the individual, after conjugation, is essentially the same as before conjugation, or whether it constitutes a new animal. In that the solution rests. Now, the new element that the individual acquires by the act of conjugation, is the male pronucleus of its partner. In addition, it loses the greater part of its old accessory nucleus, and the whole of its old principal nucleus. In return, by way of compensation, it preserves the integrity of its protoplasm and of its other organs. M. Gruber believes the physical identity persists in spite of these modifications. M. Maupas maintains the contrary.

The thesis of Weismann regarding the immortality of infusoria eludes a direct refutation. It is neither confirmed nor overturned by observed facts.

DIXON ON INOCULATION FOR TUBERCULOSIS.

ON Monday our reporter called at the Academy of Natural Sciences to see Prof. Dixon; who received him with his usual courtesy, but at the same time requested the privilege of proceeding with his work, as he was not blessed with a corps of assistants.

While he was busily engaged in making inoculations, he was asked what he thought of the results of Prof. Koch's latest experiments, as cabled from Berlin.

"Why, if it be true that he has cured human beings of tubercular phthisis, the result is most gratifying to all those who are working for that end, and, while I fully realize the possibility of his being able to do so, judging from the results of my own experiments, at the same time I am disposed to doubt the truth of the reports."

"On what grounds?"

"Because I believe Prof. Koch to be a man who is working, not only for the sake of science, but also for the cause of humanity, and that, had he arrived at results sufficiently definite to justify the inoculation of human beings, he would have announced the fact, not only to the bacteriologists of the world, but the whole of the civilized globe would have received a full detailed account of his methods, so that we might all take our part in relieving the great mass of suffering humanity."

"If the experiments are successful on animals, why should they not be equally so with the human family?"

"Because, sir, the more experience that physiologists have with the action of drugs on animals, the more they recognize that what is true of one group of animals is not necessarily true of another group, and to a limited degree this is the case with individuals. Micro-organisms are often innocuous to man, but virulent to animals, and vice versa. Take for example the great immunity that some races enjoy from yellow fever."

"Is there any plausible theory for the results that you are seeking to accomplish?"

At this point the Professor was becoming warmed up to his subject, and seemed anxious to enter fully into the question, but, as he was engaged upon some experiments which he was anxious to carry out at once, he asked the reporter to call later in the day, when he might be able to give him a paper dealing more fully with the results of his investigations than he was able to do at that moment.

Upon the reporter calling again, the Professor handed him the following answer:

"Many theories have been advanced, but none fully expounded. When, in my article in the *Medical*

and Surgical Reporter of September 6, 1890, I acknowledged that it was quite impossible to show how the immunity was produced, I only confessed our ignorance in regard to the processes producing immunity by inoculation. At the same time I have been directed by theories. When one of England's greatest medical men, Dr. T. Lauder Brunton, was delivering the Croonian Lectures at the Royal College of Physicians, of London, I was much impressed by the manner in which he treated the subject he was discussing, which was that of 'Chemical Structure and Physiological Action.' He referred to Mendelyeff, who had expressed the view that chemical affinities would soon be brought under Newton's third law of motion, and that according to this idea chemical compounds and solar systems are built upon the same plan. For example, he compared methane, which consists of carbon and four hydrogens, with Jupiter and his four moons. This pictured the atoms of hydrogen moving around the atoms of carbon. This he followed up by explaining the chemical constitutions with what he termed a homely simile—a penknife with a number of blades for various uses. When he first produced the knife the blades were all closed, representing an innocent arrangement, but as soon as he opened its many blades he reminded his audience that it had become a dangerous instrument, so that by altering the relative position of its parts without any change in its composition, there had occurred a complete alteration of its character.

"When Dr. Brunton had finished his simple, yet forcible illustration, my thoughts wandered to what was then my pet subject, namely, the prevention or cure of tubercular phthisis. I wondered whether or not a changed form of what we believed to be the tubercle bacillus was of the same composition as the usual forms found in animal tissues, but with its component parts holding a different relation to each other, and probably harmless to the animal economy, yet when held in such relationship capable of producing that which would break up the atoms of the tubercle bacillus.

"This was a speculative idea, which of course was not capable at the time of being worked up into a complete theory, but protracted experiments were commenced and followed out as energetically as possible under a very heavy strain at the University of Pennsylvania. During the work in this direction, which has been since uninterruptedly carried on, other theories have not been lost sight of, as for instance that of leucocytes and also that of phagocytes, which are thought to possess the properties of destroying bacteria; now in a great number of tissues they do not possess this power, unless they have first been educated to secrete by attenuated virus, a chemical product deadly to the pathogenic organism.

"Another theory is that the germicidal quality of the normal tissues is sufficient to combat pathogenic bacteria.

"Another most interesting theory is that advanced by Dr. J. W. McLaughlin, entitled 'An Explanation of the Phenomena of Immunity and Contagion Based upon the Action of Physical and Biological Laws.' The explanation of the phenomena of contagion, which one theory offers, is based upon the application of the laws of wave motion to the motion of complex organic molecules.

"The author states that the striking similarity which is seen between fermentation and contagion has led many observers to believe that the latter, like the former process, is caused by microscopic organism. As there are many kinds of fermentation, each kind resulting from the action of specific organisms—for example, alcoholic fermentation is caused by the yeast plant; acetic fermentation by the micrococcus aceti; butyric fermentation by the bacillus amblyo-bacter, etc.—so it is claimed that each specific infection has its specific bacterium or bacteria. I do not think that it can be claimed that only one species or variety of bacteria will produce a specific infection; for example, a specific infectious fever. It is well known that fermentation—alcoholic, acetic, or butyric—may result from the action of more than one kind of ferment, or bacteria. Hence, if the analogy between fermentation and contagion is sound, there are grounds for believing that more than one kind of bacterium may cause a specific infection; for example, diphtheria, cholera, and other infections may each be caused by one or more kinds of bacteria.

"He goes on to say that the principles involved in fermentation are the same regardless of the exciting cause, and that the products of fermentation will largely depend on the molecular structure of the exciting ferment.

"He then proceeds to point out the striking similarity in phenomena of fermentation, as set forth, and the phenomena of contagion. Both are caused by one celled vegetable organisms; these cells in each case are microscopic in size, and can be conveyed from place to place in various ways that will readily suggest themselves, and, therefore, require no special mention.

"The cells of bacteria, like the cells of the yeast plant, excite fermentation and decomposition when they are suitably environed. In the same manner that yeast-cells decompose sugar into alcohol, the cells of the micrococcus nuthificans convert ammonia compounds into saltpeter, the cells of micrococcus lacticus convert sugar into lactic acid, and pathogenic bacteria-cells convert albuminoid molecules of the blood or tissues, of man and animals, into poisonous substances, ptomaines or toxines.

"And, again, as alcohol is poisonous to the yeast-cells, and will arrest the fermentation which they excite, and by which it was produced, so ptomaines and toxines, the product of infection created by the cells of pathogenic bacteria, poison the bacteria which caused their existence, and arrest the fermentation, or infection, which gave them life.

"And finally: As the yeast-cells can be so modified in their molecular structure that they can be caused to grow and multiply in malt solution without producing alcohol, in a similar manner the cells of some pathogenic bacteria can be so modified by 'attenuation,' in various ways, that are not only made harmless to man, but become a vaccine by which protection from the virulent microbes may be secured.

"In speaking of cells, he says: An elementary substance is the simplest known condition of matter. An atom is the ultimate part of such substance. A molecule is the smallest division of a compound substance, which has the properties of the substance.

"Each and every atom has a natural period of vibration from which it cannot be separated.

"Force, the efficient cause of all physical phenomena, is motion—of atoms, molecules, or of mass. Attraction, light, heat, and electricity are manifestations, or modes, of one and the same force; they are co-ordinate, and subject to the laws of transmutation of energy.

"As atoms have their equivalents of motion—for example, their laws of attraction, repulsion, and combination—which are inseparable from them, it

follows that, when atoms combine to form complex substances, each one carries into the combination its equivalent of force or motion; this may be modified by the motion of associate atoms, but is never lost, and when the dissolution of the compound takes place, the departing atoms carry with them the same amount and kind of motion which they had originally.

"All atoms, whether combined or uncombined, are in constant motion.

"The atomic motions of each element observe definite periods of time in their recurrence.

"Atoms of different elements observe periods of time in their movements.

"The author claims that the cells contain molecules, and that the molecular movements are governed by fixed laws, and are not the result of chance or hap-hazard action. He says: Picture in your mind's eye the marvelous mechanism of one of these little cells, with its contained molecules in active motion; each other by spaces which, although infinitely small to our comprehension, are really large when compared with the size of the molecules; remember, also, that the molecular movements are not of the hap-hazard sort, but are governed by fixed laws, and that while similarly-constructed molecules have similar modes of motion, there are marked differences in this respect between molecules of dissimilar construction. As the molecule receives its motion from its constituent atoms, the cell must receive its energy from its constituent molecules. Remember that atomic and molecular motion constitute force, so that when we speak of cell-motion we mean to imply cell-force, its power to do work, and the explanation which is offered will follow almost as an inevitable result.

"The explanation of differences in cell activities is based upon the law that force, the efficient cause of all physical phenomena, is motion—atomic, molecular, or molar; that heat, light, electricity, attraction, and repulsion are simply modes of one and the same motion, which can be converted and changed from one into the other. Now, there is a marked difference in the kind of work which these different forces or modes of motion can do. For example: Electricity can decompose many substances that light does not affect; on the other hand, light decomposes other substances over which electricity has no power; while heat, in its decomposing power, has a much larger range of action than either of the others.

"This can be the better understood by one of his illustrations. 'When waves of light, or heat, or water meet other waves of the same substance, in such a manner that the crests of one set will correspond with the crests of the other set, and the troughs of one will correspond with the troughs of the other, the waves will be enlarged—increased in amplitude.'

"Now, it is assumed that different varieties or species of cells have molecular vibrations, which, in their periods of recurrence, are distinctive of such species or variety; hence the molecular movements of cells are influenced in a certain way by other cells whose molecular periods of vibration coincide with those of the first in point of time. The wave-crest and trough from one cell striking the molecular waves of another cell less firmly fixed in its structure, crest to crest and trough to trough, the motions of the first would necessarily increase the swing of the second until the cell-molecules were swung beyond their attractions and the cell disrupted. The cell-molecules thus set free would recombine, in accordance with chemical laws, to form simpler compounds. For example, in the vinous fermentation, the molecular combinations of the yeast-cell are so timed in their motions that they can swing the molecules of sugar, held in solution, beyond their chemical attractions, and thus cause a disruption of the sugar; at the same time, the molecules or atoms thus liberated recombine to form a simpler compound—alcohol. Other cells cannot do this work, for the reason that their molecules do not vibrate in the required periods of time. In the same manner the micro-coccus aceti decomposes alcohol into acetic acid, and other bacteria perform their special kinds of work, and are incapable of doing the work of other varieties. In the same manner, pathogenic bacteria shake apart certain cellular albuminoid molecules in the blood or tissue of man and animals, while the recombination of molecules thus liberated form poisonous alkaloids called ptomaines and toxines, which are the immediate causes of the symptomatology and pathology of infectious diseases. The decomposition of albuminoid molecules by cell metabolism, principally bacteria cells, and the influences which the products of this action, ptomaines and toxines, have in the causation of disease, is a subject of greatest importance to the physician.

"'The albuminoid molecules, from whatever source derived, present certain lines of separation, like the lines of cleavage in crystals, along which they are most easily disrupted or shaken apart by cell-vibrations; hence the character of the decomposition product depends along which of these lines separation has taken place.

"'At least three distinct series of chemical bodies are formed, viz., an acid series, an aromatic series, and a basic series. Out of the innumerable products arising from the action of the bacteria-cells upon albumenoid molecules, and which have been extracted and studied, will be mentioned indol, cresol, and skatol, in the aromatic series; creatine, in the basic; and uric acid, in the acid series, serving only as mere examples.

"'Cells other than those of bacteria are also capable of decomposing albuminoid molecules, and thus produce poisonous substances, *e. g.*, in the physiological changes from albumins to peptones there is a change from innocent to toxic bodies; this may be illustrated by the hypodermic injection of the digestive leucomaine of fibrine by pepsin. It occurs practically when, after the too hearty meal, the liver is unable to care for the excess of digestive leucomaine, and they escape into the general circulation, producing somnolence, lassitude, or even stupor.

"'On this subject, Dr. Joseph Leconte says: The leucomaines, although formed by normal physiological process, are highly poisonous and inimical to health, unless speedily eliminated by appropriate organs. If, now, there should be a failure to eliminate these toxic elements, the results would be similar to those produced by disease germs, except that they would lack the quality of contagiousness, because they are not due to the presence of microbes. The liver is the organ principally concerned in the elimination of leucomaines.

"'If alkaloids, by the conjugation of "S" biliary acids, if carbohydrates, they escape the liver, and are taken care of by the blood and pancreas. If belonging to the class of phenols, they are combined with a sulphuric radical, and when that gives out are then combined with a glycosuric acid, and thus rendered innocuous.'"—*Journal of the Amer. Med. Association.*

"It is thus shown that fermentation may be the result of molecular motion, and that this process would take place whether the necessary vibrations originate in yeast-cells, bacteria-cells, or digestive ferments, which are the efficient cause of normal digestion. The principles involved in each case, the modus operandi, are the same in all. At this point, however, the similarity of results existing between the bacteria ferments and digestive ferments ceases. There is an important difference in their biological history, which carries with it an important and practical distinction. I refer to the fact that bacteria and yeast-cells are living organisms, capable of multiplying themselves by the generative act, and hence, in the case of pathogenic bacteria, are capable of inducing contagious and infectious diseases. On the other hand, the digestive ferments are molecular combinations, which have no powers of self-multiplication, and cannot cause disease of an infectious or contagious character. There is a wise and beneficent law of wide application, the operation of which controls the course and duration of infectious fevers; this law is based upon the fact that the products of cell-decomposition are poisons which destroy the cells, or the fermentation, or infection which they excite. Thus, alcohol is destructive to the yeast-cells and the vinous fermentation, while acetic acid, butyric acid, and lactic acid, will arrest the fermentation of which they are the products, and, in the same manner, ptomaines and toxines arrest the infectious diseases, of which they are severally the causes.

"On this subject Dr. Klein says: 'One of the most interesting facts observed in the growth of septic micro-organisms is this, that the products of the decomposition, started and maintained by them, have a most detrimental influence in themselves, inhibiting their powers of multiplication; in fact, after a certain amount of these products have accumulated, the organisms become arrested in their growth, and finally may be altogether killed.'

"Pasteur says: 'Many microbes seem to give rise during their breeding to substances having the property to be harmful to their own growth.'

"It is evident that the periods of time in which occur the molecular vibrations of any given cell, or molecular structure are before the first can swing apart the molecules of the second. Crest must correspond to crest, and trough to trough, before the one set of vibrations can sufficiently increase the other to cause its disruption. When the arrangement is complete *e. g.*, the vibrations of the bacteria-cell coincide in their periods of recurrence with the molecular vibrations of the albuminoid molecular substance, and decomposition of this results, thus liberating its constituent molecules. It is evident that no new compound can form from these molecules unless its periods of vibratory recurrence do not coincide in point of time with those of the bacterium cells, the same influence which disrupted the albuminoid molecules would prevent the forming of other compounds having the same periods of vibratory motion; in fact, they must be of an opposing kind, in order not to be influenced by the bacteria cells. Now, it is again evident that when a ptomaine, possessing a molecular vibration which antagonizes that of the bacteria, accumulates in a sufficient amount, the antagonism will be sufficient to arrest the motions of the bacteria cells, and thus put a stop to the cell-metabolism which they caused—in other words to arrest the disease.

"Perhaps this power, which waves or vibrations have of increasing or destroying similar waves or vibrations, may be better understood by reference to instances where waves of sounds and waves of light thus influence each other. Take, for example, two tuning forks which have equal periods, when sounded each will give out the same continuous musical sound. Let us, however, change the vibrations in one of the instruments, by attaching some substance to it, or in any other way. The two instruments will no longer vibrate together, the vibrations will not coincide in time, hence the sound that will be given off by them will no longer be a continuous musical note gradually fading away, but will be a rising and falling sound. When the two instruments vibrate together, the sound will be distinct. As one vibrates more rapidly than the other, they will gradually part company, and the sounds which they give out will coincide less and less in point of time as one gains upon the other, and becomes fainter and fainter, and disappear when the wave crest of one coincides with the wave trough of the other. After passing the line, the sound becomes gradually more and more distinct, until it again reaches its acmé, when crest and trough coincide to crest and trough of the other side, and thus the sound will rise and fall, depending upon the amount of wave interference or antagonism, until the vibrations are exhausted.

"It is thus seen that sound waves can be caused to so act upon each other that, instead of producing sound, they will cause silence. Illustrations could be given, if it were necessary, to prove that when waves of light are met by other waves of light whose periods of vibrations are one-half wave length behind the first, darkness will be the result. The waves of the one set are quenched or antagonized by those of the other, in accordance with the law of wave interference. This beautiful and important law was discovered by Dr. Thomas Young, one of the most remarkable men the world has produced. Speaking of this law, Sir John Herschel says: 'This principle, regarded as a physical law, has hardly its equal for beauty, simplicity, and extent of application in the whole circle of science.' The principles involved in this law of interference furnish an explanation why ptomaines are inhibitory, and sometimes poisonous, to the bacteria-cells which originated them. The amount of antagonism exerted by the ptomaines, in accordance with this theory, would depend entirely upon the extent of interference which its molecular waves would cause in the molecular waves of bacterium-cells. As the amount of interference in waves of sound and waves of light varies, and thus produces variable amounts of sound from zero up, there are ptomaines whose inhibitory power over the actions of cells differs in the same degree and from similar causes.

"Bacteria-cells, whose wave lengths do not coincide in periods of recurrence with those of any cells, blood serum, or tissue fluids of man, would for this reason be innocuous to man. At the same time they might find, in fluids or tissues of other animals, molecular combinations which these bacteria could disrupt, and for this reason they would be virulent to such animals.

"The third and last means by which immunity can be secured against an infectious disease, is by previously injecting its characteristic ptomaines into the individual, beginning with small amounts and gradually increasing the dose as the individual becomes accustomed to the poison, this means of immunity by the injection of specific ptomaines, is of recent discovery, and bids fair to become of great practical advantage. It already explains what had been previously very obscure, how the pregnant mother

gives immunity, for example, in syphilis, to the child in utero.

"It is generally admitted that solid particles, like bacteria-cells, cannot pass from the mother through the placenta to her child in a normal state of the placental tissues; hence, the fact of the child's immunity secured through the mother was not understood. That soluble substances like ptomaines can pass in this way by osmosis is not questioned, and in doing so explains how the child receives from the mother immunity from syphilis and other infectious diseases.

"To return to the investigations which I have been pursuing, I may say that I have not, in my line of practical work, followed out any one theoretical path. I have instituted micro-organic war. Thus I have pitted one kind of micro-organism against another.

"I have dissolved germicides in predigested fat and added small quantities of bile, and injected it into the intestinal tract. My object in this was first to stimulate the glands to work, and at one and the same time bring the germicide, as nearly as possible in its nascent state into contact with the glands. The addition of the bile was with the idea of assisting absorption.

"I have also conceived a method of injecting germicides into the spleen with the object of reaching the blood corpuscles, when in a state of transition, with the chemical in an unchanged condition, and I am investigating the plan of passing virus through different animals for the purpose of finding conditions that would lessen the degree of virulence.

"Then again, I have produced tuberculosis in the skin of animals, thereby exposing the germ to a greater supply of oxygen and light than when growing in the viscera.

"Other methods are to attenuate preparations of the products of the tubercle bacillis growing on nutritive mediums, and inject them into the intestinal tract.

"The hypotheses advanced in my terse article in the *Medical News*, of October, 1889, have given the most brilliant results. Yet, I have never felt that the time had arrived for me to experiment on the human subject. Nor do I mean to be tempted to take any risks until the act would be purely an unselfish one. Even with the results that have been obtained in my laboratory, *I would be sorry to have the general public stimulated with the idea that inoculation for tubercular phthisis has been perfected.*

"Owing to the rumored report that Prof. Koch has been, and is inoculating human beings, it behooves me to await his results and understand his methods. Should his prove to be similar to my own, I will at once inoculate man.

"If, however, it should appear that he is working on different lines, and that his plan is less dangerous than my own, it will be welcomed and adopted by me."

Annotations.

THE Medico-Chirurgical Hospital, of Philadelphia, has always prided itself upon the truly charitable work done by it, and its freedom from those troublesome restrictions that sometimes hinder other institutions from extending aid to needy cases. An incident that occurred in New York November 5, fully illustrates the importance of this point. A driver fell from his seat and was run over, having both legs broken. An ambulance was summoned, but the surgeon in charge said he could not take the man to Roosevelt, as it was a case for Bellevue. The charity ambulance came next, but "the case was out of his district," and his hospital only "took cases of insanity and alcoholism." After the man had lain on the pavement for two hours and thirty-five minutes, he was at last taken away.

ENCOURAGE HOME SCIENCE.

WHEN we read of the encouragement Koch is receiving from the German government, of the clinical material, laboratory facilities, and funds placed in profusion at his disposal, we are constrained to admit that there are elements of value in the paternal style of government. Nobody grudges the little bit of the taxes that goes to such a purpose. But here, where everything is left to individual exertion, too often it is seen that what is everybody's business is assumed by nobody. The importance to humanity of such investigations as Dixon's cannot be overestimated. Not all the wars, nor all the pestilences, "since first the leaky ark reposed in mud," have destroyed a tithe of the lives that have fallen victims to the tubercle bacillus. Not a home exists but has put on mourning for some loved one dying from consumption. And yet not an effort is made to put our own countryman on an equality with the European investigators, as regards facilities for this work.

SIR MORELL MACKENZIE objects to large hospitals, on the ground that they are an unscientific anachronism; the aggregation of the sick in large numbers being as much out of place as intramural interment. The added virulence of germs from the bodies of numerous cases is to be considered more dangerous than that of those emanating from dead bodies.

Another objection to the large hospital is that the relief given by it is in a sense indiscriminate. The out patient department of hospitals is the greatest pauperizing agency now existent. From this comes the third objection—the cruel hardships entailed upon medical men in the neighborhood. He considers the special hospital in a large degree free from these and other objections, and favors the exaction of a small fee from dispensary patients.

While this would not in any degree relieve the neighboring practitioners, or obviate any of the above objections, as the fee must perforce be a level one and within the means of the poorest, it would greatly benefit the hospital exchequer. It may be safely said that in our goodly city of brotherly hatred there are none too poor to afford an occasional glass of beer. If a charge of five cents were made for every prescription filled, the aggregate would constitute a handsome sum. If the fee required were larger, there would be a serious diminution in the number of patients applying, unless all the large clinics were to unite in making a uniform charge.

Letters to the Editor.

I AM requested by the Hon. Secretaries of the Committee of Organization of the Seventh International Congress of Hygiene and Demography, to call attention to the fact that this Congess will be held in London during the week beginning August 10, 1891.

The governments of all countries and municipalities, and all public health authorities, universities, colleges and societies occupied in the study of the sciences more or less immediately connected with hygiene, are invited to coöperate and appoint delegates to represent them at the Congres. The Prince of Wales will preside.

A committee of organization has been formed, of which Sir Douglas Galton is Chairman, and Prof. W. H. Corfield and Mr. Shirley F. Murphy are Honorary Secretaries. An exhibition of articles of hygienic interest will be held in connection with the Congress. The last of these Congresses was held in Vienna in 1887, and was attended by over 2,000 persons, and it is expected that the London meeting will be one of great magnitude and importance.

JOHN S. BILLINGS, M.D.
Member of the International Permanent Committee.

Book Notices.

THE PHARMACOLOGY OF THE NEWER MATERIA MEDICA. Part VII. Embracing data upon Chian, Turpentine, Damiana and Jamaica Dogwood. Geo. S. Davis, Detroit.

ESSENTIALS OF MINOR SURGERY AND BANDAGING, with an appendix on venereal diseases. By EDWARD MARTIN, A.M., M.D. Illustrated. W. B. Saunders, Philadelphia, 1890.

VIVISECTION. By ALBERT LEFFINGWELL, M.D. New York: Jno. W. Lovell Co. Paper, pp. 95. Price, 20 cents.

The author advocates the restriction of vivisections, to the exclusion of experiments intended to illustrate physiological points already established.

A COMPEND OF HUMAN ANATOMY. By SAM'L O. L. POTTER, M.A., M.D. Fifth Edition, revised and enlarged, with 117 wood engravings, and appendix, and 16 lithographic plates of the Nerves and Arteries. Philadelphia, P. Blakiston, Son & Co., 1890.

Dr. Potter's compend has proved so popular that a fifth edition has been called for in three years. We do not know that we need say anything else about the book. The profession evidently stands ready to buy it.

MATERIA MEDICA FOR NURSES. Compiled by LAVINIA L. DOCK. G. P. Putnam's Sons, N. Y., 1890.

This is intended to serve as a text book for nurses' schools. It contains much information that will prove useful to nurses, and a good deal that they can have no possible use for. The arrangement is bad, the division into inorganic and organic, with appropriate subdivisions, being of no value to any one. The matter in each topic is, however, pretty well selected.

BACTERIOLOGICAL TECHNOLOGY FOR PHYSICIANS, with seventy-two figures in the text. By DR. C. J. SALOMONSEN. Authorized translation from the second revised Danish edition. By William Trelease. New York: Wm. Wood & Company, 1890.

The objects of the author are stated to have been the preparation of an outline adapted to bacteriological courses for physicians and veterinary surgeons, and a guide for home study without an instructor. The simplest and easiest apparatus and methods are described; such as require an inexpensive outfit. For the practitioner's use, this book is well fitted, as containing what he can readily utilize, leaving more extensive works to those who make such studies their special work.

A MANUAL OF AUSCULTATION AND PERCUSSION. Embracing the Physical Diagnosis of the Lungs and Heart, and of Thoracic Aneurism. By AUSTIN FLINT, M.D., L.L.D. Fifth Edition; thoroughly revised. By J. C. Wilson, M.D. Illustrated with wood cuts. Lea Brothers & Co., 1890. Cloth, 12 mo., pp. 268. Price, $1.75.

Dr. Austin Flint was a master of this art, and had the rare faculty of expressing himself clearly in few words. The present edition has assuredly suffered nothing by the editorship of Dr. Wilson.

A PRACTICAL TREATISE ON IMPOTENCE, STERILITY AND ALLIED DISORDERS OF THE MALE SEXUAL ORGANS. By S. W. GROSS, A.M., M.D., L.L.D. Fourth Edition; revised by F. R. Sturgis, M.D. Philadelphia: Lea Brothers & Co., 1890. 8 vo., pp. 173. Cloth. Price, $1.50.

The name of the younger Gross will long be remembered from his work on the mammary gland, and the book before us. On its first appearance the present work was acknowledged to be the best on the subject then extant, and no subsequent work has deprived this one of its supremacy. The neglect of this group of diseases by the regular practitioner gives one of his most fruitful fields to the quack.

REGISTER OF PHYSICIANS IN PENNSYLVANIA BY COUNTIES, from July 1, 1881, to December 1, 1888. Taken from the Fourth Annual Report of the State Board of Health. Harrisburg, E. K. Meyers, State Printer, 1890.

It is greatly to be regretted that this register is incomplete; thirteen counties having failed to make returns. Indeed, scarcely any of the data was supplied by the county authorities, but was collected by the efforts of Dr. Lee.

Out of the report we gather that there are over 9,000 physicians in the State, or one to every 459 inhabitants, by the census of 1880. In some counties the law has been ignored; but two registrations having been made in Bedford and twelve in Lehigh. Of the 8,248 reported, 641 are of foreign birth; 384 of these coming from Great Britian and her dependencies, and 165 from the German empire. Out of 76 names on the first page, 8 are said to be illegally registered.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. A yearly report of the progress of the general sanitary sciences throughout the world. Edited by CHARLES E. SAJOUS M.D., and seventy associate editors, assisted by over two hundred corresponding editors, collaborators and correspondents. Illustrated with chromo-lithographs, eng avings and maps. F. A. Davis, publisher. Philadelphia, 1890.

The third years' Annual will serve to keep alive the memory of La Grippe; as the editor states in his preface that the work was greatly hindered by the prostration of more than half the staff by that troublesome affection. No trace, however, is to be found in the pages of the five handsome volumes, of the debilitating influences of the great epidemic. On the contrary, the edition of 1890 is fully up to the standard of previous years. In a work of such magnitude it is inevitable that there should be inequalities. Good judgment in selection and skill in condensing are not so generally possessed by even highly educated physicians as to make all parts of such a work of the highest merit. But a careful examination of the Annual induces surprise at the general excellence of the whole work. It would be invidious to criticise the few lapses noted. Much valuable matter has been necessarily omitted, to keep the work in proper limits; and in some cases individual favor appears to have been consulted in the selection rather than merit. But this is inevitable, until the dawn of the millenium or the general

adoption of the Bellamy system inaugurates a new race of men, superior to ignoble influences. In the meantime, the Annual is a work of such value that we cannot see how a practising physician can do without it. It is a medical library and reading-room of exceptional comprehensiveness.

OINTMENTS AND OLEATES, ESPECIALLY IN DISEASES OF THE SKIN. By JOHN V. SHOEMAKER, A.M., M.D., Second Edition. Revised and enlarged. Philadelphia: F. A. Davis, Publisher, 1890. Price, $1.50.

In spite of the paltry attempt of the editors of the last edition of the U. S. Dispensatory, to ignore Dr. Shoemaker's work, his name will be associated with the oleates as long as they are employed in medicine. Although Dr. Shoemaker was not the first to employ the oleates, nor, we believe, has he ever claimed priority in their use, it was he who directed the attention of the profession to these therapeutic agents and gave them the wide popularity they now enjoy. The present edition gives the result of five years' additional experience on the author's part. In addition, he has extended the scope of the work by including a consideration of ointments in general; including those in use here and in the leading countries of Europe.

We regret that in the well-written chapter on ointment bases, no mention is made of mollin or of oleite, both which are important when the absorbability of drugs from ointments is considered. The numerous prescriptions are in English; and between this and bad Latin the choice is easily made. But as long as we have a Pharmacopœia the better way is to follow it, for the sake of uniformity. The substitution of *official* for officinal is objectionable on the same score. The European formulas serve to show how far their pharmacists are behind our own. Some of their ointments are fearfully and wonderfully made; as, for instance, the following, known as "Noah's Ointment:"

℞.—Basilicon ointment,
Althea "
Laurel "
Mercurial "
Poplar "
Oil of hypericum,
Myrrh,
Petroleum,
Oil of lavender,
Oil of turpentine, of each, equal parts.

In a former number we have given examples of greater value. The author does not take an enthusiastic view of the oleates, but claims for them a "prominent place among the more scientific means for treating" diseases of the skin.

The reader will find many good things in the book; enough to pay him many times over for its cost; in fact, it is one of the works which will not idly occupy its place on the owner's shelves, but will soon be ornamented with frayed edges, dog's ears, and other evidences of use, by an appreciative owner.

The Medical Digest.

IN spite of all efforts, fevers are rapidly spreading in London.

PEROXIDE OF HYDROGEN is said to quickly relieve pruritus vulvæ.

To relieve pain by hypnotism, and thereby render the patients hysterical, is to cast out Satan by Beelzebub.—*Germain Sée.*

HANNON, (*Med. News*) details two cases of vesical calculus, in the successful treatment of which, Buffalo Lithia Water was a prominent factor.

NOCARD finds that strychnine does not hinder the development of tetanus in animals after injections of tetanus poison have been given, as Peyraud claimed.

BOKAI reports two cases of scarlatina in which the incubation did not exceed sixteen hours. The children were admitted to the hospital for diphtheria, and in sixteen hours the scarlet eruption appeared.

SALOL IN CHOLERA.—Macrae, in the *Indian Medical Gazette*, records his experience with salol in twenty-five cases of cholera. The mortality was 60 per cent., and the author considers the drug a failure, unless as a prophylactic and in the very early stages.

FOR EXCESSIVE VESICAL TENESMUS.—

℞.—Benzoic acid	. . . . .	4 parts.
Borax	. . . . .	6 "
Water	. . . . .	180 "

M.—S. Three tablespoonfuls a day.

—*Med. Press.*

DIGITALIS.—The indication for the use of digitalis is not a murmur in the heart, nor a certain form of valvular lesion, nor tumultuous action, nor yet rapidity of action, but whenever it is desirable to fill the arteries and empty the veins.

—Dewees, *Kansas Med. Jour.*

McSHERRY'S GARGLE.—

℞.—Zinci sulphat.		
Acid. carbolici	. . . . .	āā gr. v.
Glycerini	. . . . .	℥ss
Aquæ	. . . . .	℥iijss.

M.—S. Use as gargle, three or four times a day.

—*Baltimore M. and S. Record.*

A SEDATIVE FOR BABES.—

℞.—Camphoræ monobrom.	. . . . .	gr. j. ij
Ext. hyoscyami fl.	. . . . .	gtt. v. viij.
Syr. lactucarii	. . . . .	℥ij.

Tere optime, fiat mistura.

S. A teaspoonful as needed.

—*Ex.*

TORSION OF ARTERIES.—Murdoch (*Weekly Medical Review*) speaks as follows of torsion: The advantages of torsion as compared with ligation are: 1. The greater facility with which it can be applied. 2. Torsion is a safer method, being less liable to be followed by secondary hemorrhage. 3. Healing is facilitated, because the wound is free from any irritating or foreign body.

TOBACCO IN HERNIA.—Spalding (*Texas Courier-Record*) describes a case of acute inguinal hernia in a man thirty years old. Chloroform and taxis, with inversion, failed to effect reduction. A strong decoction of tobacco was injected into the rectum. In fifty minutes there was great prostration, feeble pulse, retching, and full tobacco narcosis. Examination then showed that the hernia had disappeared.

PILOCARPINE IN DERMATOLOGY.—Klotz, in the *Journal of Cutaneous and Genito-urinary Diseases*, describes two cases in which pilocarpine proved useful. The first was a case of squamous eczema, with dry, hard, resistant, slightly scaling skin. Injections of pilocarpine were employed with much benefit. The other patient had eczema squamum and

rimosum of both palms, which were covered with a very hard and thick horny skin. Little progress was made towards a cure until the pilocarpine injections were used.

The author's conclusion was that the use of pilocarpine in pachydermatous and xerodermatous conditions of the skin is strongly indicated, and deserves to be subjected to renewed trials, but in small doses and long continued, as recommended by Pick.

EHRLICH'S TEST FOR TYPHOID FEVER.—Make two solutions, one consisting of 72 minims hydrochloric acid and 10 grains sulphanilic acid in 3 ounces distilled water; the other, a freshly-prepared ½ per cent. solution of sodic nitrite in distilled water. To 26 parts of urine from a typhoid fever patient, add 25 parts solution 1, and 1 part of solution 2, and the mixture is rendered alkaline by addition of ammonia. A bright orange-red color appears.

SALOL IN TYPHOID FEVER.—Whatever the differences of opinion as to the cause of typhoid fever it is pretty definitely settled that, after a certain stage, the disease is a septicæmia, due to the ulceration of Peyer's glands. The natural tendency of the fever is to terminate about either the fourteenth or the twenty-first day, and when an intestinal antiseptic, such as salol, is used, which prevents the ulceration from infecting the system, the natural tendency to recovery is increased.—Cahall, *Med. News.*

KANSAS FERTILITY.—The wife of John Bean, of Valley Falls, aged sixty-five years, gave birth to twins on Monday evening. Her daughter, Mrs. Stratton, who lives in a neighboring township, presented her husband with twins the same evening. Mrs. Stratton's daughter Eva was married a year ago and lives in Arrington. The friends were not yet through congratulating them when Mrs. Stratton heard that her daughter had given birth to twins herself on Monday evening. The three double births occurred within ten minutes of each other.

—*Kansas Med. Jour.*

RIDER'S BONE.—Schmit gives, in *Revue de Chirurgie*, a review of this subject. The name is given to an osteoma developing in the muscles of the thigh in horsemen. In one of his two cases the affection was bilateral. It has been found in the adductors, pectineus, gracilis, biceps, and psoas; and occurs almost constantly in cavalry soldiers, being developed in the early days of their training. It is due to injury, and develops in two to sixteen weeks. Once formed, it does not enlarge. It interferes in variable degree with duty, and is easily and successfully removed.

—*Brit. Med. Jour.*

WOUNDS OF THE LUNG.—It seems to the writer that we have, in the case of gun-shot wounds of the lung, a condition closely analogous to similar wounds of the abdomen; we have the same dangers to meet and overcome, modified merely by peculiarity; our means of meeting these dangers are more direct in the case of the abdominal wound than in the pulmonary, but, nevertheless, we have such means in the free incision and drainage as above proposed; therefore we are, from a surgical standpoint, justified in employing this procedure, and it is the firm belief of the writer that, if used, we may look forward hopefully to the result, and that the prognosis in such cases will be much bettered thereby.

—Axford, *Med. Standard.*

ANALGESIA is a frequent symptom in insanity, and its importance is largely due to the fact that its presence is a menace to the physical well-being of the patient. Its etiology and pathology being yet but little understood, it is certainly worthy of more extended and careful study. As, apart from paresis, epilepsy, and in a lesser degree in dementia, its presence cannot be predicted in any case, but must be sought for; and as further it is not incompatible with comparatively high grades of intelligence, it is well to look for it in every case. And, finally, if it proves to be at all frequent in the early stages of alienation, a new and valuable aid to diagnosis will be at our command.—Keniston, *Amer. Jour. of Insanity.*

MAGRUDER, in *Practice*, reports the removal of a large vesical calculus per vaginam. The stone was immovable, the bladder appearing as if contracted around it. A pair of tooth-forceps was employed to break up the concretion, and detritus washed out with a fountain syringe. The stone filled up the pelvis as a fœtal head would, and a vesico-vaginal opening had been produced, which was utilized in the operation. The patient made a good recovery.

TOWNSEND (*Archives of Pediatrics*), employed bismuth, sodium salicylate, lactic acid, and resorcin in summer complaint; the result being expressed in the following words: "I am inclined to be rather skeptical as to the value of these antiseptics in the treatment of summer diarrhœa." Lavage of the large intestine with tepid water gave better results, ten out of thirteen cases showing marked improvement.

ARISTOL.—I have drawn the following conclusions, after observing its action during the past five months:

1. The drug is free from all objectionable odors.
2. When used over large surfaces, you obtain all of its medicinal effects without any toxic effect. It is not absorbed.
3. It possesses stimulating, alterative, and anæsthetic properties; the latter effect less marked than that obtained from iodoform.
4. It does not produce any discoloration of the skin.
5. On account of its dark color, you can readily observe how far the powder has been used on a diseased surface.
6. It is not irritating, and its use is not contra-indicated in the treatment of facial eruptions, as chrysarobin and pyrogallic acid.
7. It appears to possess the necessary properties to make it an efficient substitute for iodoform.

—McLaughlin, *Va. Med. Monthly.*

CHRONIC, SO CALLED RHEUMATIC AFFECTIONS.—When the term chronic rheumatism is used, it should be limited to those cases in which the joints are painful but not swollen, or in which there is a neuralgia or an arthralgia associated with myalgia or apart from it; or in which the fasciæ are affected, or in which there is a general neuralgic condition supervening on an acute attack of rheumatism. This is what we prefer to call "chronic rheumatism." But in speaking of the symptoms of rheumatoid arthritis, I will make reference to those symptoms which are sometimes put down as common to both. Let us imagine two patients sitting side by side, one with chronic rheumatism and the other with rheumatoid arthritis. Now, what do we see? In the rheumatoid arthritis case the first thing that strikes us is most probably the pallor of the patient, as compared with the chronic rheumatic. We look a little closer, and the

next thing we perceive will most probably be the joints. The patient with the chronic rheumatism will present in this feature little or nothing; whereas, on the other hand, the rheumatoid arthritis patient will be more or less crippled. There will be distinct muscular atrophy in the rheumatoid arthritis case, and the complexion will present the pallor mentioned before, showing on closer inspection yellowish tinges on the face, neck, and perhaps elsewhere. If we ask both patients if they ever had rheumatic fever, they will probably say No; but further inquiry will elicit the probable fact that the family history of the patient with rheumatism will be a good one, or perhaps at the most a rheumatic one, while the rheumatoid arthritis patient in most cases gives or shows a strumous taint. It is upon the basis of this strumous taint that we feel we must look for further assistance to guide us in the treatment of this terrible crippling malady. It is nearly always present more or less. We are aware that this strumous history has not been particularly referred to in other descriptions of the disease. It being the almost invariable accompaniment has induced us to bring the matter forward. In fact, to look upon struma and rheumatoid arthritis as cause and effect, has seemed to us the one plain characteristic in our investigations.—Lane, *The Lancet.*

EXERCISE IN PELVIC DISEASES OF WOMEN.—Kellogg, in the *Medical News*, thus advertises his sanitarium:

The propositions which I shall undertake to maintain in this paper are the following:

1. That defective muscular development is a prime factor in the etiology of a large number of the pelvic disorders to which civilized women are subject.

2. That the mode of dress common among civilized women is a cause of deficient and asymmetrical muscular development.

3. That the dress commonly worn by civilized women is productive of such disturbances of the relations and functions of the abdominal and pelvic viscera as directly lead to the production of functional and structural changes in the uterus and its appendages.

4. That properly-graduated exercises, with adjustment of the clothing that will permit free and unrestricted movements of every group of muscles in the body, are of great importance in the management of a large class of pelvic disorders.

FOR NEUROTIC INCONTINENCE OF FECES.—Take of:

Strychnine crystals	gr. xvj.
Acetic acid, dilute	ʒiv.
Alcohol	ʒiv.
Tr. cardamom comp	ʒj.
Water to make	ʒxvj.

M.—S. Take ten to twenty minims with an equal amount of fl. ext. ergot after each meal.

Before retiring I had him cleanse the lower bowels with a hot decoction of hydrastis canadensis. The strychnine was given as a nerve tonic; the ergot was for tone to the circular muscles; the heat as a stimulant to the bowels; the hydrastis as a tonic and healing agent to any catarrhal or ulcerated condition which might be present, and the water as a vehicle and cleansing agent. The results of four months' treatment are that when the patient is careful of his diet he has but one movement of the bowels every twenty-four hours, and that at the time of the injection of the decoction of the hydrastis. He says if he guards his diet and cares for his treatment as directed, he never has more than one action per day.

—Mendenhall, *Med. Standard.*

MARRIAGEABLE AGE OF FEMALES IN INDIA.—In a discussion on this subject at the Calcutta Medical Society (*Indian Medical Gazette*), Mrs. Foggo presented a report, from which we take the following: "In no other country have I seen as many cases of derangements of the generative organs as since I have had charge of the Lady Dufferin Zenana Hospital—infantile uterus, absence of ovaries or uterus, or both—and, after strict inquiry, I feel myself justified in putting it down to pre-menstrual copulation." Her conclusion was that the marriageable age for females in India should be fixed at fourteen years.

Bolye Chunder Sen claimed that the prevalent belief concerning early puberty in India was erroneous, except where precocity was induced by child-marriage and early sexual excitement. In the Brahmo community, he found that out of 65 girls, 2 menstruated before the twelfth year, 3 during the twelfth, 29 during the thirteenth, 26 during the fourteenth, 4 during the fifteenth, and 1 during the sixteenth year. It was also a fact that the eruption of the teeth occurred somewhat later than in England. He advocated sixteen years as the minimum age for the consummation of marriage.

THE Cincinnati *Lancet-Clinic* makes the following comment on Dr. Bartholow's retirement:

"Notwithstanding the slack of tension, some months ago tidings were borne to us of erratic conduct that passed beyond the bounds of eccentricity and clearly indicated symptoms of an unsettled mental equilibrium. The weakest link was sagging.

"A sense of sorrow for the surely coming wreck locked 'the news' from the public. We felt that a giant intellect was tottering, an intellect that had given its very life to scientific and clinical research was dying, its light was becoming a shadow; until, at last, the public have 'the news.'

"A pall of mournful sadness comes over us as we contemplate the thought of this termination of such a career as that of the indomitable, the gifted Dr. Roberts Bartholow.

"A lesson, a parting lesson, is hereby taught, and should be thoroughly heeded by those who feel the iron grip of an insatiable ambition that is inordinate in its character, that leads and goads the discontented to a violation of physiological laws in order to be able to accomplish some specific purpose that may be ever so laudable in motive. To some we say: SLOW UP, lest a link be weakened and the golden bowl broken."

TOTAL BLINDNESS FOLLOWING SHOCK—RECOVERY.—November 18, 1889, I was called to see a boy of six years, who had become blind the day before. The boy had been exceptionally rugged and active. October 23 he had had a transient attack of headache and vomiting. November 4 he had a transient attack of what seemed to be a cold, accompanied by wandering rheumatic pains in the feet and limbs. November 12 a mild tonsillitis with a temperature of 101°. November 14 the mother fell down stairs; the boy was greatly frightened, and was soon seized with a severe headache followed by epistaxis and relief. Light diet had been ordered, but on the 16th he was so well and so hungry that he was allowed to eat a large piece of beef-steak for supper. The following day he had a convulsion followed by total blindness.

Status præsens, November 18—nervous and restless, but does not complain of pain. Answers questions slowly, but intelligently. Sensibility is

much diminished in the extremities. The pupils are moderately dilated, and both react slightly to light, but the left less than the right. The ophthalmoscope shows no changes at the fundus. Small doses of calomel and iodide of potassium were ordered. November 20, vision began to return, and two days later was fairly good. December 3, there is some anæsthesia of the hands and feet as well as diminished control of them. The arms and legs are considerably shrunken, and at times there are pains in the latter. The right pupil reacts sluggishly to light. Vision is good, and the fundus normal in both eyes. There is headache at times, but the boy eats and sleeps well, and is s eadily improving.

At the present time Dr. Murray reports the boy as entirely recovered.—Brown, *N. W. Lancet.*

Acute Epiphysitis.—In March, 1890, a youth, aged fourteen, was supposed to have had an attack of acute rheumatism. He came under my care three weeks after its onset, with the usual signs of acute synovitis of the hip, very ill, and with a temperature of 101°. A few days afterwards some pus was removed with an aspirator from the neighborhood of the hip. For a day or two afterwards the local condition improved, but in the meanwhile it had been ascertained by cultures that the pus contained staphylococcus aureus. The temperature continued high (101.8°), and the boy was losing ground so rapidly that the hip-joint was explored by an anterior incision. There was pus both within and without the joint, and the upper epiphysis of the femur was only joined to the shaft by some soft inflammatory material, which was afterwards found to contain micrococci; the ligamentum teres and the acetabular cartilage were intact; but the articular cartilage of the femur had partly disappeared without any caries of the bone. The head of the femur was removed, and the wound drained and treated in the usual way. The dressing was renewed on the fifth, ninth, and fourteenth day, and then replaced with a dry dressing, under which the wound healed within six weeks after operation.—Lockwood, *Brit. Med. Jour.*

Piscidia Erythemia.—It can be used in many troubles, chief among which is neuralgia, facial, cardiac, gastric, or ovarian. In the ovarian and cardiac types it seems to be particularly efficacious. In pain about the heart, associated with rheumatism, it is reliable. In ovarian neuralgia and neuralgic dysmenorrhœa it has worked wonders, relieving pain and having little or no effect upon the bowels. In some cases of bowel trouble, characterized by retained indigestible matter, extreme pain, and nervousness, a dose of fifteen drops of the piscidia extract has quieted pain and nervousness, and at the same time interfered in no wise with the expulsion of the disturbing element. In cystitis it has been a sovereign remedy, controlling the tension and severe burning pain in short order. In incontinence of urine it has been happy in its effects. Many reflex coughs are dissipated by its exhibition. In the intense nervousness and distress shown by men on the verge of delirium tremens it has done remarkably good work. I have used it in half-drachm and drachm doses, and induced quiet and restful sleep. Whenever an intolerance to opium is shown, there seems to be an unusually good field for the exhibition of piscidia.

I have as a rule used it in doses of from five to ten drops, very seldom exceeding that. I have seen several cases in which eight drops, repeated once in three hours, caused most alarming symptoms, such as heart failure, cold skin, dyspepsia, inability to swallow, and a bluish condition of face, lips, and finger tips. It should be used most cautiously, and the dose increased as you obtain an idea of the patient's ability to stand the drug.

—Pitcher, *Detroit Emerg. Hosp. Reports.*

Excretal Dermatitis.—Walsh, in the *Medical Press*, thus summarizes a paper on this subject. His propositions are:

1. That dermatitis may be set up in a certain number of cases by the excretion of irritant products from the system.

2. That such irritants may be either chemical or due to specific micro-organisms and their products.

3. That many of the inflammations of the hypoblastic as well as of the epiblastic tissues are simply expressions of excretory irritation.

4. That the severity of the inflammation, and consequent damage, is in proportion to the specific effect of the irritant upon excretory epithelium.

5. That excretory parallels may be drawn between drugs and specific disease-poisons, both as regards their channels of elimination and their harmfulness to epithelium.

6. That while excretion affords the key to a certain number of skin inflammations, it also accounts for the success of many well established methods of treatment which aim at shifting the channels of elimination. At the same time it affords a rational basis for further therapeutic measures.

7. Finally, some observers trace the tendency to catarrhal troubles—the "eczematous condition"—to an unstable epithelium. Others refer them to disorders of the nervous system, such as trophoneuroses. While freely admitting there are wide differences of predisposition in individual skins, yet it seems probable that the dermatitis is not infrequently an excretionary symptom secondary to a blood condition.

Galvano-Cautery in Corneal Diseases.—A few minutes after the instillation of a few drops of a 5 per cent. solution of cocaine, there is complete anæsthesia of the corneal layers, so that the approach of the red-hot loop, or its repeated application (which is usually accompanied by considerable hissing and sizzing) causes no painful sensation.

The operator separates the lids, and applies the heated loop to the infected zone, making and breaking the current by the simple pressure of a button on the handle of the electrode.

In a short time we observe a surprising change. The adjacent corneal tissue gains increased transparency. The turbid aqueous becomes clearer. The trifling pain following the operation soon ceases. If there is hypopyon it is speedily absorbed. The zone of infiltration rapidly recedes and fades. And in many cases within the next twenty-four hours such an improvement will be manifested as to show the destructive process to be at an end, and the process of repair already begun. However, if after twenty-four hours the ulcer shows a tendency to extend, a similar "touching" should be again resorted to.

The loop should be applied until the masses of detritus clinging to the floor and sides of the ulcer are destroyed. The bordering infiltration for a short distance should also be destroyed; none of this parasitic material should be allowed to remain; it should be completely sterilized. If this be done a recurrence need not be feared, for it is a fact now universally admitted, that the development of spores becomes impossible on sterilized soil.

The treatment by the galvano-cautery, as outlined, secures benefit to the tissues in a threefold way:

1. It separates rapidly and thoroughly the parts already involved from the yet healthy tissue.

2. It averts the extension of the infection, and makes the adjacent tissues aseptic.

3. It stimulates the tissues to take on a healthy reparative process.

Especially applicable is the galvano-cautery in the treatment of rodent ulcers, in which every new point of infection demands its prompt destruction. Here we require a white-hot tip sufficiently delicate to allow of the nice manipulation necessary for working in a district of no more than a millimeter in extent. And this is only possible with the galvano-caustic loop, which is brought to a red heat at the exact moment when it was needed, and cools as quickly, and produces no annoying light effects by the glowing of the wire.

It is also highly serviceable in scrofulous ulcers of the cornea, which show a deep crater-shaped excavation, with sharply cut edges, accompanied by a light grade of ciliary irritation and muco-purulent conjunctival secretion, and which defy all therapeutic agencies.

It is applicable also in those ulcers due to the entrance of foreign bodies.

And, lastly, in the chronic indolent ulcer, painless and apparently lifeless, showing no tendency towards a reparative process, the galvano-cautery is an efficient agent to stimulate and bring about a healing process.—Magee, *Kansas Med. Jour.*

CHANGING PESSARIES.—As far as I am aware, no change whatever is made in the size of a pessary worn during the time occupied in the treatment of a case of chronic retroflexion or retroversion. Nor are there any directions given in the latest text-books on the subject of gynecology to this end. As a rule, a pessary—when found to fit and give relief to the most marked symptoms of discomfort of which the patient may complain—is allowed to remain without change for a considerable period, and when removed, either for facility of examination or for cleansing, is almost directly replaced should the flexion or version for which it was originally introduced be still found to exist (though it is to be hoped in not so marked a degree). I consider that the ground gained by the wearing of a properly-fitting and well-adjusted "Hodge," is not fully taken advantage of *unless another slightly longer is substituted for the one worn, at regular intervals*, till a degree of ante-version is obtained, so that when eventually the pessary is finally removed, there will be far less likelihood of any return of the uterus to its original abnormal position. Again, the length of time occupied in the treatment of such cases will be considerably shortened by the change of the pessary.

The very important point of endeavoring to replace the uterus as nearly as possible in its normal position *before introducing a pessary* is often overlooked. The knee-elbow position will be found the best, either for manipulation or the introduction or removal of the pessary, unless contra-indicated by some pectoral or cardiac lesion.

The practical advantages I have found by adopting this plan must be my excuse for publishing this paper.—Duke, *Med. Press.*

DIPHTHERIA FROM ANIMALS.—I found out the following practical cases, pointing to the direct infection of children from hens affected with diphtheria:

1. In Corrientes street, a child, two years of age, died in the month of January. The house had a single story, and had a back yard without pavement. A few days before the child took ill two of the hens which were kept in the house had ulcers in the throat.

2. In California street, two children, one two years old, the other four, died in the month of March. The house was a lodging-house, and had a back yard without pavement. A few days before the children died two of the hens which were kept in the house died, having "made a strange noise with their throats" during their illness.

3. In Europe street, a child, three years of age, died in the month of April. Lodging house, with back yard, without pavement. A month before the child died the hens sickened with an "affection of the mouth."

4. In Salta street, a child, nine years old, died in the month of April. House had a back yard, without pavement. Three weeks before the child, several of the hens died with "ulcers in the throat."

5. In Talcahuano street, a child died from diphtheria (all these cases that I am relating died from this disease). This child was in the habit of playing all day in the back yard, where the hens were kept. In those days when the child sickened, several hens died from an affection, where the "throat was swollen, and membranes were extracted from the nostrils."

6. In Jehallos street, two children died of diphtheria in the month of May. Back yard without pavement. A month previous to the death of these children the hens suffered from ulcers in the throat.

7. In Belgrano street, a girl, sixteen years of age, died of diphtheria. The yard was paved, but imperfectly so. A hen house was kept in the yard. A few days before the girl died two of the hens had suffered from ulcers in the throat.

8. In San Antonio street there is a large lodging-house, where several children had died of diphtheria at different times. There is a yard without pavement. The man in charge of this house informed me that it is a common thing for the hens kept there to suffer from ulcers in the throat.

9. A physician in Buenos Ayres lives in a two-story house. On the ground floor a hen house is kept on one of the "patios." One day he saw one of his children playing amongst the hens, and, reminding that he had once assisted at a fatal case contracted from a diphtherial hen, he called out to his child to come upstairs. Next day the child sickened with diphtheria, and subsequently died. It was found that the hens at the time were suffering from ulcers in the throat.

These cases which I have selected would of themselves point strongly to the direct infection of children from hens and other animals; but, taken in conjunction with recent observations made in England and on the Continent, they are a strong testimony to the truth of the theory which ascribes diphtheria in animals to the presence of a damp soil, and diphtheria in the human subject to contagion from animals so infected. I do not for a moment wish to state that diphtheria in the human subject has no other origin than that just mentioned. It is, however, ascertained that diphtheria in the human subject may be due to dampness, to the removal of mixed deposits of vegetable and animal matter after they have been in intimate union for some time, to infected milk, and lastly, but very rarely, to infected water.

Davison, *Brit. Med. Jour.*

CONCERNING POSSIBLE THERAPEUTIC USES OF HYPNOTISM.—I am not very sanguine as to the future of hypnotism as a curative agent in nervous or other diseases. According to my own researches—and those researches date back eight years or more—the method is vastly more limited than one would imagine from the exaggerated claims which have been of late advanced in its behalf by over-zealous medical men. Let me mention a few of those limitations. In the first place, only a certain (unknown) percentage of persons are amenable to the hypnotic influences, or, to express it more exactly, only a limited number of persons are hypnotizable with the present means at our command. Secondly, the effects obtainable are evanescent; for, unless we hypnotize the patient so often as to incur the risk of doing him an injury, we cannot hope to perpetuate the suggestions sufficiently to do any good.

From these considerations it follows that the permanent effects which one may hope to produce upon the material economy through this class of psychical forces must be insignificant. Functions may, it is true, be exalted or depressed for the time being, but qualitative changes in the structures themselves are impossible. The internal capsule, the thalamus, the motor convolutions, the sensory tracts in the cord once destroyed, are not to be restored by any form of interference. Moreover, a physiological substitution (in Bernheim's sense) for these and analogous structures, seems well beyond the farthest bounds of physiological probability. Hence, as I have previously mentioned, all attempts to apply hypnotism to the treatment of organic disease are opposed to sound thinking. Indeed, I regard such proposals as hurtful to science, and particularly medical science, inasmuch as the reputation of the profession for sound judgment is thereby greatly jeopardized. The facts which the advocates of such questionable methods have to present are still too few in number, and too meagrely substantiated, to form the basis of affirmative argument. What then is the position which hypnotism may be expected to assume in the neuro therapy of the future? In my opinion the rôle which it is destined to play is a subordinate one. In the light of its present and past history, I do not see how it can be otherwise. As an adjunct in the management of minor degrees of hypochondria, morbid apprehension, depression, and hysteria, it may sometimes be invoked, but then only as a collateral expedient, and largely with a view to rendering the patient more tractable and amenable to other elements in the plan of treatment. The aid afforded by an appeal to the expectancy of the sick is familiar to every physician; by invoking the aid of the hypnotic state such an appeal may be made with an energy which is not attainable while the patient remains in the ordinary mental condition. But, while the miracles recorded by enthusiastic writers make, like Munchausen's tales, entertaining reading, they are not likely to enter into the sober realities of the consulting room.

In view of what we now know of it, hypnotism is to be dealt with by the physician: for it is evident that a competent medical man is alone in a position to judge of its real or imaginary advantages. Certainly, only such a man should be allowed by our statutes to invoke its assistance in the treatment of diseases, however insignificant.

—Corning, *Med. Record.*

SPINAL CONCUSSION.—In closing a discussion upon this subject, at the American Medical Association, Dr. Clevenger said he had been astonished at the improvement of some patients after the settlement of damage claims, but this seemed to be due to the relief from worry which the conclusion of the suit afforded; but it would be presumption to affirm that such cases were *entirely* cured until years had elapsed and unprejudiced opinion been engaged. This "quick cure by settlement" savored too much of the unscientific assertion of Herbert Page, who was the most ordinary special pleader for railways.

While both Dr. Gapen and Dr. Judd had been opposed to Dr. Clevenger in recent suits against corporations, and seemed to look at the matter from one standpoint, the latter had frequently been called as expert for either side, and sometimes for both sides at the same time.

The statement that there were no vaso-motor centers in the spinal cord, and hence the symptoms were cerebral, was rather surprising, when the sympathetic system is so intimately united to the spinal all the way down the cord length, and such ordinary matters as constipation and hemorrhoids producing brain troubles show that such "vaso-motor" difficulty as emotionalism need not have its origin necessarily in the head.

The intimation that subjective symptoms were always false, when made the basis of claims against railways, is on its face absurd. Physicians have to judge from the consistency of symptoms whether they were real or not.

Contrary to Dr. Gapen's findings, Dr. Clevenger had devoted all his spare time for three months in analyzing Erichsen's cases, and found an abundance of objective signs in all. But it depends upon what is meant by "objective." To the uneducated the galvanometer and electrical indications convey no meaning. Paralysis and insanity of the gravest kinds would present nothing "objective" to the biased witness. There are cases in which no honest opinion can be reached, and in such it is best to allow the mind to remain a "scientific blank," as Huxley advises. Only the untrained imagine they must have a positive opinion upon everything under the sun. Sometimes a little waiting will determine matters.

A case examined a year ago presented nothing but purely subjective symptoms, and to-day there is atrophy of an arm. In another instance a laborer fell partly into a coal hole, with one leg in and the other out, and after a year is unable to do any work, but there was such an utter absence of anything in the way of electrical or other findings, and so many of the ordinary symptoms of Erichsen's disease were missing, that Dr. Clevenger told the lawyers that everything depended upon the credibility of the witness, and he preferred having nothing to do with the case as it stood at present.

We find many instances, in and out of the books, of fatal issues among patients accused of malingering. We occasionally find a conscientious railway surgeon who acknowledges that railway accidents do not always improve health, and that a few dollars' settlement will not resurrect the dead.

—*Jour. Amer. Med. Assoc.*

ANTISEPTICS.—The antiseptic plan of testing typhoid fever has only of late occupied the attention of medical men. This plan of treatment has grown out of the germ theory concerning the disease, and I am inclined to the opinion that it is the only rational way to treat this trouble, since we pretty well all agree that it is essentially a germ disease. Now, I do not claim, by any means, that as yet we have a specific absolute for typhoid fever, but I do say that, as sure

as there is any certainty in medicine, *there is a specific* for typhoid fever, and I believe with our modern antiseptic practice the disease is as capable of being cut short as many other diseases about which we raise no question as to their abortion. If we accept Mendenhall's and Waugh's theory, that the symptoms of typhoid fever are caused by decomposition in the bowel—and I am sure it is the most rational—how can we believe otherwise than that it is cut short by remedies preventing such putrefactive changes? True, we may not prevent it after such change has *actually* taken place, but even then many of its distressing symptoms may be cut short, or even prevented. The distressing nervous symptoms, such as delirium, subsultus, etc., are now by some of the most distinguished men regarded as the invasion of the products of germ action, and in proportion as these germs increase will their product increase and these symptoms be aggravated. Now, then, if by modern asepsis we prevent the formation of the germ, or by antisepsis we destroy the germ, and such productions, with their destructive results, cease, what goes with the theory of self-limitation? Will the remedies do this? Why not? Will they not prevent putrefaction and decomposition in other cases? Why not in this? If they will in other circumstances, most certainly they will in this. What are the remedies most likely to do this, and at the same time that are not hurtful in other respects? First of all I put mercury. Why? It has been a custom almost as long as we have had any knowledge of medicine to give mercury on the beginning of all febrile disorders. This practice has been routine and empirical in most ca es, and yet a world of good has come from it. All authorities agree that our own systems have in them a laboratory which produces a substance far richer in antiseptic powers than almost any compound dispensed at the hands of the most skilful chemists, and this substance we call bile. It is a fact that it will prevent decomposition in the alimentary tract as nothing else will. So, then, in order that we shall have the quickest and most successful disinfection of the bowel, we must stimulate the liver to thrown out an extra amount of this fluid, and there is nothing that will more successfully do this than mercury in some form, besides it in itself is highly antiseptic. The preparation I like best in these cases is the protoiodide in 1-100 grain doses every hour till its effects are produced. Many times I use calomel in small doses with good results. Who knows but that the old dose of calomel has aborted many a case of typhoid fever by this means. I believe it, although given with an entirely different purpose. Next to mercury comes zinc sulpho carbolate, sub-carbonate of bismuth, naphthaline, resorcin, carbolic acid, iodine, the mineral acids, etc.; preferable among these I like the sulpho carbolate of zinc in two or three grain doses every two or three hours. I have found it an excellent remedy, especially when there is an astringent antiseptic needed.

—Broughton, *N. C. Med. Jour.*

RAPID AND EASY METHODS OF ESTIMATING UREA AND SUGAR IN URINE.—The apparatus for the estimation of urea consists of a pipette with one graduation, and marked 1 c. c., and a graduated tube about 1 c. c. in diameter and about 30 c. long, and closed at one end.

The process depends upon the decomposition of urea by hypobromite of sodium, producing nitrogen, carbon dioxide and water. The two latter bodies remain in solution, while the nitrogen escapes. The measure of the nitrogen is depended upon to calculate the weight of urea which produced it.

I use two solutions, and mix them when used. These are a twenty per cent. solution of potass. bromide and Labarraque's solution of hypochlorite of soda, which, when mixed, produce the hypobromite of soda and chloride of potassium.

The graduated ureometer is filled to the sixth mark with the solution of potass bromide, then to about the fifteenth mark with Labarraque's solution, and finally to about the twentieth with water. With the pipette add 1 c. c. of urine, and close the ureometer with the thumb and invert a few times to mix thoroughly. When effervescence ceases the height of the liquid is noted; the open end is then plunged into a vessel of water, the thumb removed, the tube is lowered until the surface of the water within and without the tube are on the same level, and another reading taken. The difference between the two readings gives at once the number of grains of urea in each fluid ounce of the urine under examination.

The graduations of the instrument represent grains per fluid ounce when 1 c. c. of urine is taken.

For the estimation of sugar, the solution used is Fehling's, with a small quantity of potass. ferrocyanide to prevent precipitation of red oxide of copper. By this procedure we are better able to see the discharge of the blue color of the copper solution. The apparatus consists of a short burette. terminating in a comparatively wide delivery-tube, beveled at the end. The delivery-tube passes through a cork in the neck of a flat-bottom flask of four ounces capacity. Another tube, bent at right angle, passes through the same cork, for the escape of steam. The burette is graduated in c. c. and also with a second graduation, representing grains per fluid ounces, when 5 c. c. of Fehling's solution are taken.

The process is performed as follows: Fehling's solution is poured into the burette until it is filled exactly to the 5 c. c. mark, which, on the burette, is marked F. A 1 to 20 solution of potassium ferrocyanide is added until the 7 c. c. mark is reached.

The stop-cock is now opened and the liquid allowed to run into the flask. The burette is filled with water, and this is allowed to flow into the flask. The apparatus is now put upon a sand-bath, and allowed to come to a boil. The burette is now filled to the zero mark with the urine to be examined, and added carefully until the blue color of the solution in the flask is discharged. The exact point is easily seen. It is only necessary to read off the grains of sugar per fluid ounce on the left-hand graduations.

In most cases of diabetes it will be necessary to dilute the urine to about five grains per ounce after a preliminary test. This is easily done in the burette. We may simplify the preparation of the solution by adopting the following formula for the preparation of Fehling's solution, which is now usually made in two parts and mixed when needed for use:

SOLUTION NO. 1.	
Copper sulphate	34.65 c. c.
Dist. water	500.00 "
SOLUTION NO 2.	
Rochelle salt	1.73 c. c.
Caustic soda	200.00 "
Potass. ferrocyanide	50.00 "
Water	500.00 "

For use, mix equal quantities of these two solutions, measured out with the burette. I have had but a few months' experience with the keeping power of Solution No. 2; but, so far as I have tested it, there is no reason for not adopting this formula.

—Bartley, *Brooklyn Med. Jour.*

FRENCH NOTES.

By A. E. Roussel, M.D.

Sudden Death Following Simple Catheterism of the Uterus for the Production of Abortion.—M. Gibert communicates the following observation to the Medico Legal Society: A woman, four months pregnant, resolves to have an abortion produced. The woman to whom she addresses herself introduces into the canal of the cervix of the uterus a small rubber syringe. But at this moment, and before having made the least injection, the patient, who has partaken of a copious breakfast one hour before, is attacked by syncope, which becomes more severe, and is followed by death in five minutes.

It is possible that the fact of having indulged in a copious repast was an unfavorable circumstance, as the abortionist — who admitted having performed more than one hundred abortions—desired to postpone the séance until another day. It is also remarkable that a simple injection of liquid is sufficient to detach the membranes.

The autopsy revealed no lesion whatsoever; it is therefore probable that the death by syncope was due to a phenomenon of inhibition, already observed in cases of a similar nature.—*L'Union Médicale.*

Iron Pills (Huchard).—

℞.—Extract of cinchona,
Extract of gentian,
Extract of rhubarb,
Potassi tartrate of iron . . . āā 72 grains.
Extract of nux vomica . . . . . 3 "
Oil of anise . . . . . gtt. v.
Glycerine, q. s.
For one hundred pills. Take two pills before each meal.

—*La Bulletin Médical.*

Aristol.—*1. Solution in Ether:*

℞.—Aristol . . . . . 150 grains.
Ether . . . . . ℥ij.

2. Collodion:

℞.—Aristol . . . . . 15 grains.
Collodion . . . . . ℥j.

3. Pomade:

℞.—Aristol . . . . . 150 grains.
Olive oil . . . . . ℥iij.
Lanoline . . . . . ℥ij.

4. Crayons (Sibieciki):

℞.—Aristol . . . . . 75 grains.
Gum Arabic, q. s.
For five crayons. To be introduced into the uterus.

5. Suppositories:

℞.—Aristol . . . . . 7½ to 15 grains.
Cocoa butter, q. s.
For one vaginal suppository.

—*Bulletin de Thérapeutique.*

M. Decroix mentions the deleterious influence of tobacco on the functions of generation. He supports this affirmation by numerous observations, and concludes by demanding that the academy formulate a law preventing the use of tobacco before the age of sixteen years.—*La France Médicale.*

The Constant Galvanic Current in Gynæcology.—Dr. Apostoli delivered an address at the Berlin Congress, of which the following are the general conclusions and summary:

1. The constant galvanic current is principally indicated in gynæcology, in endometritis, and in fibroma; the sovereign treatment in painful and circulatory troubles (amenorrhœa, dysmenorrhœa, and metrorrhagia), it is a powerful remedy for arresting the evolution of non-malignant neoplasms, and aids the reabsorption of extra uterine exudations. It exercises a very salutary resolutive action in many peri-uterine inflammations, and in certain catarrhal ovaro-salpingitis, but it is inefficacious, and even hurtful in large doses, particularly if the intra-uterine pole is without action against the suppurating inflammation of the annexes.

Its variable intolerance, which increases with the inflammatory condition of the annexes, should serve as a precious means of diagnosis, to determine the existence and the nature of peri-uterine liquid collections (hematic or suppurating) unsuspected or simply doubtful, and should serve to hasten in those cases delayed or refused surgical intervention.

2. The effects of the constant galvanic current are polar and inter-polar. The inter-polar action, trophic and dynamic, which increases as the square of the intensity furnished is added to the polar action; the latter is utilized first by the different action of each pole, which Apostoli has made known, then the calorific action developed by the passage of the current (to augment the intestinal circulation), and finally the antiseptic action of the positive pole, which Apostoli and Laquerriere have recently given experimental demonstration.

3. The elevated galvanic applications, employed in various ways, above 50 milliamperes, according to the tolerance of the patients, and other clinical indications form the fundamental basis of the method of Apostoli and find their justification:

(*a*) First in the utilization of the circulatory drainage, direct consequence of the calorific action due to the resistance of the passage of the current, and proportionate to the square of the intensity.

(*b*) In the antiseptic action or microbicide, which increases with the intensity produced.

(*c*) In the rapidity and efficacy of the effects produced, which are proportional to the square of the electrical energy, after an analogous formula, to that of the measurement of the energy of other natural forces: $Q = \frac{1}{2}$ m b 2.

(*d*) In the generalization, more easy of method in rebellious cases (hard fibromas, and sub-peritoneal, endometritis, etc.) and in young women.

(*e*) In the eloignement of the relapses, which, other things being equal, will be that much less to be passed, the more intense has been the application.

4. If the vagmal application of the galvanic current (which is the method created by M. Chéron for fibromas only, and applied since by A. Martin, Braeht, Meniere, Onimus, Carpenter, Mundé, etc.) produces results, they are very inferior to those of the intra-uterine application, which should remain the method of choice:

(*a*) Because it utilizes above all the maximum of the current produced, and of its energy.

(*b*) Because it utilizes the antiseptic action of the positive pole which is altogether local, and which is done away with in the inter polar circuit and at the level of the negative pole.

(*c*) Because it often adds a diurative and caustic action to the intra-uterine application, thus treating at the same time either a simple endometritis, or the endometritis which so often complicates fibroma and the peri-uterine inflammations, insuring in this way a more rapid cure, more complete and more permanent.

(*d*) Because it furnishes, to a better extent than vaginal applications, the relief of pain, and renders

more tolerable the employment of high doses, and finally it assures a greater efficacy in rendering possible an increase of the intensity applied and the sanguine irrigation which accompanies it.

5. Vaginal punctures made at a depth of a few millimeters (from 2 to 5) by means of a filiform trocar of gold, insulated in all its extent excepting at the point, forms the complement often very salutary of intra-uterine therapeutics, created by Apostoli, in better localizing the galvanic action and in rendering more efficacious, in certain cases, the application of small and moderate doses.

6. The innocuity of his intra-uterine therapeutics affirms for itsef: First, as compared with the bloody method of intra-uterine curettage, and particularly as regards the statistics furnished by the entire world as compared with his own. From July, 1882, to July, 1890, he has made 11,499 galvanic applications, distributed as follows: 8,178 intra-uterine positive galvanic caustics; 2,486 intra-uterine negative galvanic caustics; 222 vaginal galvanic punctures positive; 614 vaginal galvanic punctures negative.

He has treated 912 patients, comprising 531 fibromas. 133 simple endometritis, and 248 cases of endometritis complicated by peri-uterine inflammations divided into :

Clinic: 313 fibromas; 70 simple endometritis; 163 cases of endometritis complicated by peri-uterine inflammations.

Private: 218 fibromas; 63 simple endometritis; 85 complicated endometritis.

He has had three deaths, which may be attributed to operative failure (two galvanic punctures, one for a sub-peritoneal fibroid, the other for an ovaro salpingitis; one galvanic caustic for a cyst of the ovary mistaken for a fibroma).

He has observed thirty cases of pregnancy following after intra uterine galvanic applications.

ITALIAN TRANSLATIONS.

By William F. Hutchinson, M.D.

From Il Giornale dell' Exercito e della Marina.

Dr. Robert Messalongo states that all symptoms produced by gastric derangement, such as vertigo, tinnitus aurium, headache, general weakness, etc., do not depend upon structural change in the stomach, but are the expression of an auto-infection of the blood by toxenes developed by chemical decomposition of the ingesta in abnormal conditions. The author of this statement has experimentally demonstrated these toxenes in dyspepsia, and found that their inoculation gave rise to pathological manifestations identical with those of that disease.

Dyspepsia, therefore, is nothing but an auto-infection of the system kept up by altered innervations of the stomach. During and after digestion in normal conditions, there is always some slight production of these toxenes, but they are destroyed during their passage through different organs in their course.

He concludes that the most rational treatment for this disease will be, in acute cases, to relieve the stomach of these agents by emetics, at the same time neutralizing their strength by antiseptics. To restore innervation to its normal condition, tonics should be given.

Euphorine: A New Antipyretic.—The class of synthetic remedies for reducing febrile temperatures has been increased by the introduction of the compound named above. It occurs as a white crystalline powder with a faint aromatic smell and slight taste, recalling that of cloves. It is soluble in alcohol or in mixtures of alcohol and water, and hence its administration in mixtures, or even merely dissolved in wines, is facilitated. A number of physiological experiments were made which proved (1) that it does not produce any changes in the blood; (2) that it is non-irritant; (3) that in healthy persons it seems (in doses up to three grains) to be inert; (4) that no phenol, aniline, albumen and sugar are excreted in the urine of the animal taking it. It will be convenient to give the dosage before speaking of the therapeutics: As an antipyretic for patients under fifteen, eight grains are given in two doses with an interval of half an hour; for adults, fifteen to twenty-four grains daily. As an anti rheumatic twenty to thirty grains daily are required, and the analgesic effect is produced by doses of fifteen to thirty grains daily. Euphorine proves useful in various acute and chronic febrile disorders. On the average the effect was produced in one half to one hour, culminated in three hours (or rarely six), and lasted from five to seven hours. As the temperature went up again rigors were observed and profuse perspiration; during the apyrexia patients felt quite comfortable. Cyanosis and collapse were rare and transient. The effect of the remedy was marked in acute febrile rheumatic conditions; fever and pain disappeared, the affected parts became less sensitive to pressure, and the power of movement was increased. Over chronic rheumatism it appears to have less influence. What seems to be a very promising property of the compound is its antiseptic power; it was tried upon ulcers of long standing, and chronic cases of ophthalmia; in these, ulceration was promptly arrested and healthy granulation set up. Euphorine has been successfully given by Professor Giacosa, of Turin, and also by Dr. Sansoni, both of whom studied its therapeutic action in a number of cases.—*Hospital Gazette.*

Medical News and Miscellany.

At the Presbyterian Hospital, Chicago, Nov. 7, a child died from the effects of chloroform while undergoing an operation for the removal of a small mole from the cheek.

Dr. W. J. Hearn has been appointed Lecturer of Clinical Surgery at Jefferson Medical College. He is at present one of the visiting surgeons to the Jefferson and Philadelphia Hospitals.

Dr. J. C. McPherson, of Lyons, N. Y., while on a visit to Chicago, was knocked down by footpads and seriously injured. The thieves were frightened away before securing the doctor's valuables.

Prof. John J. Reese spoke on What Constitutes Reliable Evidence in Criminal Poisoning," before the Medical Jurisprudence Society at the hall of the College of Physicians, Thirteenth and Locust streets, Philadelphia.

Children's Aid Society.—During the month of October the Children's Aid Society, 127 South Twelfth street, found situations for forty-seven mothers at service, every mother taking one child with her. There were also eighteen children placed in private families to board, and nine were placed in private families on trial.

SOME very strange accidents are brought to light by the accident insurance business. For instance, a man at Zaliska, Ohio, a stationary engineer, was kicked very severely by a hog. It disabled him for quite a number of weeks, and he was paid $97. Another case was that of a man at Chillicothe, Ohio. As he was stooping to pick up some kindling wood a game rooster gaffed him in the wrist, cutting an artery, which disabled him for some time.

THE theatres threaten to prosecute claims for damages against the city, for interference with their business. Sore throats, alleged to be due to Mr. Wagner's newly improved gas, have almost broken up the companies at some of the principal theatres. It is rumored that the throat specialists contemplate a petition to the Director, asking him to continue the present method of manufacture. The sale of lamps during the past month has been enormous.

PATENTS, ETC., on medical subjects issued November 4, 1890:—

Obtaining cream of tartar	A. Martignier	Montpelier, France.
Inhaler	Warren & Dow	Wooster, O.
Making lactose or milk-sugar	Bennett & Boynton	Burlington, Vt.
Cough remedy	C. Jensen	Chicago, Ill.
Soda water dispensing apparatus	C. Adami	Boston, Mass.
Spray bath	G. Taylor	Jersey City, N. J.
Surgical-needle holder	C. H. Truax.	Chicago, Ill.
Truss	M. Wise	Athens, O.

LABELS.

"Clevenger's Indian Hair Balsam"	Clevenger Hair Balsam Co.	Minneapolis, Minn.
"Howe's Diphtheria and Sore Throat Cure"	F. C. Howe	Sterling, Neb.
"Dr. Swan's Lung and Cough Balsam"	W. A. Oxnard	Holbrook, Mass.
"Sloan's Improved Green Ointment"	E. S. Sloan	Malden and Boston, Mass.
"Woman's Relief, the Great Panacea for Diseases of Women	A. F. Stephens	St. Joseph, Mo.

WEEKLY Report of Interments in Philadelphia, November 1 to 8, 1890:

CAUSES OF DEATH.	Adults.	Minors.	CAUSES OF DEATH.	Adults.	Minors.
Abscess of liver	1		Inflammation brain		2
" neck		1	" bronchi	4	5
" throat	1		" kidneys	9	
Asthma	1		" larynx		2
Apoplexy	9		" lungs	23	8
Alcoholism	4		" heart		1
Bright's disease	12	1	" peritoneum	1	
Burns and scalds		5	" pleura	1	
Cancer	10		" s. & bowels	3	3
Casualties	15	2	" blood vessels	1	
Congestion of the brain	1	1	Inanition		11
" " lungs	2	4	Insanity	1	
" " liver	1		Leucocythemia	2	
Child birth	1		Locomotor ataxia	1	
Cholera infantum		1	Malformation		1
Consumption of the lungs	33	5	Marasmus		8
Convulsions		13	Neuralgia of the heart	1	
Croup		7	Old age	8	
Cyanosis		5	Obstruction of the bowels	1	
Debility	2	7	Paralysis	10	1
Diabetes	2		Poisoning, lead	1	
Diarrhœa		1	Pyemia		1
Diphtheria		23	Rheumatism		1
Disease of the heart	15	2	Sclerosis of spine	1	
" " liver	1		Septicæmia	3	1
" " spine		1	Stone in bladder	1	
Drowned	1		Suffocation		1
Enlargement of the heart	1		Suicide, cutting throat	1	
Fatty degen. of the heart	3		" shooting	1	
Fever, malarial	1		Syphilis	1	
" scarlet		6	Teething		3
" typhoid	6	2	Tumor	3	1
Fracture of skull	1		Uræmia	2	
Hemorrhage from lungs	2		Whooping-cough		3
Homicide	1	1	Total	207	141

THE BRAIN AND SPINAL CORD.

They may talk of the brain and point with pride,
To its arching dome and its basis wide;
To its cortical cells and its ganglia deep,
And the treasures of thought its chambers keep,
To the wonders which eye and ear enthrall,
But the spinal cord surpasses them all.

For the eye will close, and the brain will tire,
And our thought in its very source expire;
While the lordly brow with lowered crest,
Seeks the downy pillow in needed rest;
But the sentinel cord its vigil keeps,
For "the spinal system never sleeps."

The brain may suffice for our waking hours,
When the mind controls its wayward powers.
'Tis by it we laugh and by it we weep;
It leaves us to die when it goes to sleep,
But the tireless cord with a ceaseless play
Is wakeful and active both night and day.

When the powers of life seem about to yield,
The brain is the first to resign the field;
But the spinal cord holds out to the last,
And it often conquers when hope is past,
Survives the weak maunderings of the brain,
And ushers us back to the world again.

Then here is a toast I would have you hail,
The spinal cord from the bulb to the tail.
You surely must honor the famous spot
Where Flourens located "the vital knot."
The cord! the cord! with its mysteries deep,
Which the pyramids guard and the ganglia keep,
The first to grow and the last to fail,
The spinal cord from the bulb to the tail.

—*Canada Lancet.*

TO CONTRIBUTORS AND CORRSEPONDENTS.

ALL articles to be published under the head of original matter must be contributed to this journal alone, to insure their acceptance; each article must be accompanied by a note stating the conditions under which the author desires its insertion, and whether he wishes any reprints of the same.

Letters and communications, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication, however. Letters asking for information will be answered privately or through the columns of the journal, according to their nature and the wish of the writers.

The secretaries of the various medical societies will confer a favor by sending us the dates of meetings, orders of exercises, and other matters of special interest connected therewith. Notifications news, clippings, and marked newspaper items, relating to medical matters, personal, scientific, or public, will be thankfully received and published as space allows.

Address all communications to 1725 Arch Street.

Army, Navy and Marine Hospital Service.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, U. S. Army, from October 24, 1890, to November 1, 1890.

Leave of absence for one month, with permission to apply for an extension of fifteen days, to take effect upon the arrival of Acting Assistant-Surgeon, A. P. Frick at Fort Navey, is granted Surgeon Stevens G. Conway, U. S. Army. Par. 2, S. O. 112, Dept. of Arizona, Los Angeles, Cal., October 24, 1890.

By direction of the Secretary of War, the leave of absence granted Captain Charles B. Ewing, Assistant-Surgeon, in S. O. 131, September 22, 1890, Dept. of the Missouri, is extended fourteen days. S. O. 250, A. G. O., October 25, 1890.

Headquarters Department of the Platte, Omaha, Nebraska, October 27, 1890. Leave of absence for one month, on surgeon's certificate of disability, is granted Captain Guy L. Edie, Assistant-Surgeon, U. S. Army, Fort Douglas, Utah. S. O. 80.

Leave of absence for one month to take effect about the 31st instant, is granted First Lieutenant J. D. Glennan, Assistant-Surgeon. Par. 1, S. O. 146, Dept. Mo., October 23, 1890.

By direction of the Secretary of War, the following changes in the stations of officers of the Medical Department are ordered:

First Lieutenant Charles E. Woodruff, Assistant-Surgeon, is relieved from duty at Fort Gibson, California, and will report in person to the commanding officer, Fort Missoula, Montana, for duty at that post, relieving Major Calvin DeWitt, Surgeon.

Major DeWitt, upon being so relieved, will report in person to the commanding officer, Fort Hancock, Texas, for duty at that post. Par. 6, S. O. 249, A. G. O., Washington, D. C., October 24, 1890.

First Lieutenant Philip G. Wales, Assistant-Surgeon, is relieved from station and further duty at Fort Huachuca, Arizona Territory, and assigned to duty at San Carlos, Arizona Territory, where he is now temporarily serving. Par. 13, S. O. 254, A. G. O., October 30, 1890.

So much of paragraph 2, S. O. 208, A. G. O., September 5, 1890, as directs First Lieutenant Nathan S. Jarvis, Assistant-Surgeon, to report for duty at San Carlos, Arizona Territory, is revoked. On the expiration of his present sick leave of absence, Lieutenant Jarvis will report in person to the commanding officer, Fort Bayard, New Mexico, for duty at that station. Par. 13, S. O. 254, A. G. O., October 30, 1890.

Captain William J. Wakeman, Assistant-Surgeon, is relieved from duty at Fort Bidwell, California, to take effect on the final discontinuance of that post, and will then report in person to the commanding officer, Fort Huachuca, Arizona Territory, for duty at that station. Par. 12, S. O. 254, A. G. O., October 30, 1890.

Captain William H. Arthur, Assistant-Surgeon, is relieved from duty at Fort Bayard, New Mexico, and will report in person to the commanding officer, Fort Grant, Arizona Territory, for duty at that Fort, relieving First Lieutenant William B. Banister, Assistant-Surgeon. Lieutenant Banister, on being relieved by Captain Arthur, will repair to this city, and report for duty to the commanding officer, Washington Barracks, District of Columbia. Par. 12, S. O. 254, A. G. O., Washington, D. C., October 30, 1890.

Changes in the Medical Corps of the U. S. Navy for the week ending November 1, 1890.

STEPHENSON, F. B., Surgeon. Detached from Receiving ship "Wabash," and wait orders.

MARTIN, H. M., Surgeon. Ordered to the Receiving ship "Wabash."

STONE, LEWIS H., Assistant-Surgeon. Ordered to the U. S. S. "Pinta."

ARNOLD, WILLIAM F., Assistant-Surgeon. Detached from the U. S. S. "Pinta," and granted two months' leave.

OWENS, THOMAS, Surgeon. Detached from the Coast Survey steamer "Blake," and wait orders.

BLACKWOOD, N. J., Assistant-Surgeon. Ordered to the Receiving ship "Vermont."

BOGERT, E. S., Assistant-Surgeon. Detached from the U. S. Receiving ship "Vermont," and to the Coast Survey steamer "Blake."

MOORE, A. M., Surgeon. Detached from the U. S. S. "Kearsage," and to the Naval Hospital, Mare Island, Cal.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service from October 6, 1890, to October 25, 1890.

HUTTON, W. H. H., Surgeon. Detailed as chairman, Board of Examiners; ordered to Washington, D. C., for temporary duty, October 14. 1890.

WYMAN, WALTER, Surgeon. To inspect quarantine stations, October 14, 1890.

LONG, W. H., Surgeon. Detailed as chairman, Board of Examiners, October 14, 1890.

SAWTELLE, H. W., Surgeon. Granted leave of absence for five days, October 13, 1890.

GASSAWAY, J. M., Surgeon. Granted leave of absence for thirty days, October 11, 1890.

IRWIN, FAIRFAX, Surgeon. Detailed as recorder, Board of Examiners, October 14, 1890.

AMES, R. P M., Passed Assistant-Surgeon. Granted leave of absence for thirty days, October 14. 1890.

WHITE, J. H., Passed Assistant-Surgeon. Granted leave of absence for thirty days, October 24, 1890.

PETTUS, W. J., Passed Assistant-Surgeon. To proceed to Vineyard Haven, Mass., for temporary duty, October 9, 1890.

PERRY, T. B, Assistant-Surgeon. Ordered to examination for promotion, October 9, 1890.

KINYOUN, J. J., Assistant-Surgeon. Ordered to examination for promotion, October 10, 1890.

CONDICT, A. W., Assistant-Surgeon. To proceed to Baltimore, Md., for temporary duty, October 18, 1890.

RESIGNATION:

AMES, R. P. M., Passed Assistant-Surgeon. Resignation accepted by the President, to take effect November 15, 1890, October 14, 1890.

Notes and Items.

IN A WORD.—Inquisitive Old Lady (to mother of crying infant): "First?"

Mother (snappishly): "Last."—*Epoch.*

"WHAT did the doctor say about your wife?"

"He told me I must prepare for the worst. So I don't know whether he ment she's going to live or nie."

CHARLES LENTZ & SONS, 18 N. Eleventh Street, Phila., have just issued a special list of novelties in the way of surgical instruments and apparatus; which is well worth the attention of our readers.

The calamities of Stanley's rear-Guard are attributed to the inferior quality of the pepsin supplied to it. The men could not digest their food, became dyspeptic, which made them melancholy and quarrelsome, and the result was they did nothing but get into rows with the natives. Had Bunker's pepsin been supplied, the result would have been very different

N. B.—Bunker doesen't advertise with us yet, but he will now, if he has any sense of decency.

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YOU insure your house and pay the company about $100; when the house burns down you receive $5,000. Where does the other $4,900 come from. Not out of the capital stock; for in that case the stock of such companies would go begging; and if you want to know whether this is the case, just go down to Third Street, and try to buy a little stock in any well-established fire insurance company! Of course, we all know that your $5,000 comes out of the pockets of forty-nine others, whose houses don't burn down; and who actually get nothing at all in return for their money; for all that, the insurance of property is right and proper; and no good business man neglects it. But if the principle is correct, why not extend it to other things besides losses by fire? And so it has been extended to losses by shipwreck, by flood, by dishonesty, and to losses by death. And although life insurance was denounced from the pulpit as immoral, as trading in human life, the innate truth of the principle upon which it was founded has become established; and now a man who neglects to insure his life is looked upon as quite as improvident as the one who does not insure his house.

But the applications of the system do not stop here. There are other things which can be insured as well as houses and lives. In the system adopted by the Philadelphia Bond and Investment Company,

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PARTURITION.

Aletris Cordial [Rio], given in Teaspoonful doses every hour or two AFTER PARTURITION, is the best agent to prevent after-pains and hemorrhage. By its DIRECT tonic action on the uterus it expels blood clots, closes the uterine sinuses, causes the womb to contract, and prevents subinvolution. In severe cases it can be combined with ergot in the proportion of one ounce of fluid Ext. Ergot to three ounces Aletris Cordial. It is the experience of eminent practitioners, in all cases where ergot is indicated, that its action is rendered much more efficacious by combining it with Aletris Cordial in the proportions above stated.

REMEDIES

—FOR—

RESPIRATORY AFFECTIONS

WHAT DO YOU PRESCRIBE IN COUGH MIXTURES?
ARE YOU SATISFIED?

Respiratory diseases are always endemic, and at certain seasons of the year epidemic. Many a successful patent medicine man owes his fortune to a happy or unhappy combination of cough remedies, and not a small portion of the regular physician's practice is made up of prescribing "cough mixtures." How many of those generally in use accomplish much more than to disturb the digestion or nauseate the patient we leave it to the experience of all fair-minded physicians to determine. It is certain many of these mixtures are inefficient.

It was but natural, therefore, that a wide trial should have been made of modern additions to the materia medica in this troublesome class of affections, and of those proving themselves of value, the following deserve special mention, and need only a wider knowledge of their merits to make their use very general.

A few facts regarding these drugs, which were introduced by us may interest those desiring to employ them, and we will be pleased to send those desiring more complete information working bulletins fully descriptive of their history and botanical origin, habitat, preparations, and therapeutic application containing clinical reports from private and hospital practice.

NARAGANIA ALATA AND COCILLANA. Among new drugs recently investigated, these two promise to be very satisfactory additions to the materia medica.

The evidence thus far obtained from clinical experience would indicate that these remedies are likely to prove important expectorants and respiratory stimulants. In the spasmodic cough of acute bronchitis, in the hacking cough of phthisis, and wherever there is marked interference with the respiratory function through accumulation of secretion of the inflamed membranes, these remedies are likely to prove efficient.

GRINDELIA ROBUSTA is indigenous to California. Of it we make the following preparations:

Fluid extract of the leaves and flowering tops; dose, ½ to 1 fluidrachm (2 to 4 C.c.).
Solid extract; dose, 6 to 18 grains (.33 to 1.1 grm.).
Elixir grindelia robusta; each fluidounce represents 2 drachms of grindelia robusta; dose, 2 to 4 fluidrachms (8 to 15 C.c.)
Pil. ext. grindelia robusta, 3 grs., sugar- or gelatin-coated; dose, 1 to 3 pills.

QUEBRACHO is an Argentinian drug. The bark contains the active medicinal principle. The most eligible form for its administration is the fluid extract. In spasmodic asthma it has often brought about speedy relief from the paroxysms.

MYRTUS CHEKAN is an evergreen shrub indigenous to the central provinces of Chili. Our preparation of Chekan is a fluid extract made by maintaining the drug in a seventy-five per cent. alcoholic menstruum and submitting it to hydraulic pressure. The dose is one to three fluidrachms.

YERBA SANTA is found throughout California and on the Pacific coast. The leaves are the part used. We supply the following preparations of the drug:

Fluid extract of the leaf; dose, ¼ to 1 fluidrachm (1 to 4 C.c.).
Fluid yerba santa aromatic, for making syrup yerba santa aromatic; dose, 15 to 60 minims (1 to 4 C.c.).
Solid extract; dose, 3 to 12 grains (.2 to .8 grm.).
Syrup yerba santa comp.; dose, 1 to 4 fluidrachms (4 to 16 C.c.)
Glycerol yerbine comp.; dose, 1 to 3 fluidrachms (4 to 12 C.c.)
Glycerol yerba santa; dose, 1 to 2 fluidrachms (4 to 8 C.c.).
Lozenges yerba santa comp.; dose, 1 to 2 every three hours.
Pil. yerba santa ext., 3 grs., dose, 1 to 2.
Yerba santa with malt extract; dose, 2 to 4 fluidrachms (8 to 16 C.c.).

Not the least valuable of the properties of this drug—and it is widely used for its demulcent and expectorant qualities—is its power to disguise the taste of quinine. In the form of syrup it is now regarded as the best vehicle for this purpose.

LIPPIA MEXICANA is a creeping evergreen shrub. Its habitat is Southern Mexico. The parts used medicinally are the leaves and stalks.

The tincture of Lippia Mexicana appears to be the pharmaceutical preparation best adapted to produce the full therapeutic effect of the drug. To judge from the analytical results it contains all the desirable constituents as nearly as possible in the proportions in which they are associated in the fresh drug. The tincture is given in the dose of half a drachm to one drachm repeated every three or four hours according to the requirements of the case.

Among formulæ we manufacture, we may also mention **ANODYNE PINE EXPECTORANT** and **BRONCHIAL SEDATIVE,** preparations which are agreeably tasting and combine expectorants and respiratory sedatives already well known to the medical profession.

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